MONDAY, JULY 15, 1872.

ORIGINAL LECTURES.

ON EMETICS.

BY JOSEPH CARSON, M.D.,

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LECTURE III.

3. *To impress the lungs.*—The effect upon the lungs in association with the forced efforts at expiration in the operation of an emetic has been alluded to. This effect may be advantageously called into requisition in many cases where the lungs are clogged with secretion, and where there is difficulty of expectoration. With children, sometimes an emetic is the best expectorant, as in cases of croupy catarrh, or of true croup where the patient is threatened with suffocation.

4. *To reduce the arterial circulation and abate feverish excitement.*—That emetics are evacuants in the extended acceptation of the term, there can be no question. The depletory effects are due to the removal of nutrient articles from the stomach, as well as to free discharge from the mucous membrane and emunctories, by which a draft is made upon the vascular system. The state in which the patient is left, with free exudation from the cutaneous surface, further contributes to the evacuant and sedative effects.

But nausea is in itself a depressing influence. Under its production the circulation is lowered, and this contributes to the maintenance of the diaphoretic impression. Some of the articles that are used for emetic purposes are in themselves diaphoretics; and when their full power is exerted on the circulation there is a continuance of this mode of operating.

The nervous depression caused by an emetic, allied to syncope, is similar to that produced by bloodletting; and from it the physican can derive much advantage. It is, from the first, one of the most energetic sedatives; for bloodletting and cold alone can be compared to it. The difference is that bloodletting occasions a spoliation from which time is required to recover, while the disturbance caused by emetics affects the nervous functions alone, and leaves the economy with full capacity for reaction. "Emetics, then, are powerful antiphlogistic means, which can take the place of bloodletting with great advantage."*

In fevers of the synocha or sthenic type, the use of emetics has been perpetuated from the remotest times, under the idea that the stomach, as well as the system, was thus prepared for the institution of subsequent treatment. Malarial fevers are subjected to this mode of medication not only with the view to empty the stomach and unload the liver, as also to impress the portal circulation, but for the purpose of bringing on a more speedy solution of the feverish condition, and to abridge the paroxysm. "Early exhibited, an emetic operating well will frequently check an attack; and in a more advanced stage, judiciously repeated, we shall find the pulse reduced, pain in the head relieved, sickness of stomach appeased, temperature of the surface lowered, with diaphoresis, which restores quietness and hastens a critical solution."† Similar testimony has been given by Tissot in his account of the epidemic bilious fever of Lausanne. In the treatment of inflammations, emetics are resorted to for the purpose of this sedative impression: it has an undoubted control over the capillary circulation, and when judiciously employed constitutes a powerful means of relief. In the early stage of an inflammation, a restraint may be placed upon the morbid activity of the vascular capillary circulation, whereby resolution can be effected; and should the inflamed tissue be a secreting one, the free discharge from it further contributes to a cure. In this way angina tonsillitis is sometimes speedily relieved, and the disease arrested, or, in cases of bronchitis or laryngitis, a more rapid termination may be brought about.

In dysentery, emetics were used formerly by physicians, and highly spoken of. Lind has vaunted their efficiency in the dysenteric affection of warm climates.

In the treatment of hemorrhages, emetics have been resorted to, especially in hæmoptysis. Here the design is to depress and at the same time to equalize the circulation. It has likewise been successful in anticipation of an attack of that disease. This was the practice of Dr. Bryan Robinson, of Dublin; but it was objected to by Cullen, on account of the risk entailed by the concussion. Of this practice, Dr. Chapman remarks that emetics will occasionally check pulmonary hemorrhage: "I have seen spontaneous vomiting do it in several instances, and the worst case that ever came under my notice was completely suspended by a dose of digitalis which puked violently. Led by these facts, I have for several years been much in the habit of prescribing emetics in hæmoptysis."‡

5. *To promote absorption.*—This indication applies to absorption from the mucous surface of the stomach and alimentary canal, and to that in parts distant from the central organ which is concerned in the operation. By the removal of deposits of tough or viscid mucus from the lining membrane of the stomach, medicinal articles are more readily introduced into the circulation. Where the stomach, from the cause specified, is unfitted for osmotic action, articles of primary importance may remain in contact with the surface without absorption: hence, in the treatment of intermittent fever, the antiperiodic remedies may fail for want of absorption, until the end has been secured by cleansing the stomach. The use of emetics in these cases is an old practice, but it has been brought more prominently before the medical public in later times by Bretonneau. This physician made comparative experiments at the Hospital of Tours. He vomited and purged some of his patients before the employment of quinia, and others he treated without any previous evacuation. The results were very different: in the first the fever was shortened more rapidly and certainly than in the second. The appetite and the strength were soonest re-established by pursuing this method.§ What applies to emetics may also be said of purgatives.

As depression of the circulation is produced by the operation of an emetic, an influence must be exerted upon effused liquids either in the cellular tissue or in the cavities of the body. The depression of the circulation is not the sole means of inducing absorption: in consequence of the discharge by the mucous surfaces and from the skin and emunctories, the amount of fluid in the vessels is lessened, thus producing an avidity on their part for the introduction of fluid, and with it matters in solution. There is another effect that must not be overlooked, which is the promotion of the functions of the kidneys, by which the circulation is kept free from foreign matters. Secondary evacuation may come from this cause as well as depuration.

In the treatment of orchitis and bubo the employment of emetics was recommended by John Hunter, to fulfil the purposes of reducing inflammatory excite-

* Trousseau et Pedoux, Traité de Thér., tom. ii. p. 81.
† Chapman, op. cit., vol. i. p. 123. Alibert, op. cit., i. 222.

‡ Loc. cit.
§ Trousseau et Pedoux, op. cit., tom. ii. p. 997.

ment and promoting the absorption of the effused matters.

6. *To induce relaxation.*—With this intention, surgeons formerly were in the habit of administering nauseating emetic articles to produce complete muscular relaxation in reducing luxations. This practice now has given place to the use of anæsthetics. They may be given, however, with the same intention in spasmodic croup, in lodging of food or foreign bodies in the œsophagus, in spasmodic asthma, in hooping-cough, etc. Where they cannot be taken by the mouth, they may be used hypodermically, or thrown into the rectum.

7. *To revulse by means of the impression upon the stomach.*—It is assumed that the mucous membrane of the stomach, when irritated by a stimulating emetic, is the seat of considerable fluxionary movement, and hence the extreme vascular distribution of the cœliac arteries becomes turgescent, and this extends to contiguous organs. When emetics act legitimately they excite without producing irritation, and the effect upon the mucous membrane is augmented secretion; and this effect extends to the adjacent secreting organs. This is shown by a larger quantity of fluid being discharged than is taken into the stomach.

Upon this view of a fluxionary determination to the stomach is based the supposition of revulsive action. Congestion of an organ, if it be inordinate, will interfere with its functions; and the stomach is too delicate as well as restricted an organ to be used in the direct way of revulsive impression. If the intention be to impress the extreme terminations of the portal circulation, and to produce a revulsive effect upon the organs in which this centres, the alimentary canal affords a much more efficient mode of carrying out the indication. If general revulsive effects are induced by emetics so as to influence distant organs, it must be due to the amount of discharge by secretion from the mucous surface as well as from the liver and pancreas; and this is accomplished best by articles non-irritating but sedative in their nature.

It is supposed by Alibert that emetics could be of great advantage in inflammation of the mucous membrane of the intestines, in changing the point of irritation and distributing it to other points of the economy. The advantage arises rather from the effects upon the abdominal organs that have been specified. In dysentery, a considerable advance towards the cure has been made when, by unloading the liver, the return of blood through the portal veins is unimpeded. Upon the same principle alone can be explained a relief from hemorrhoidal tumors which has by some authorities been imputed to emesis.

From the close sympathy which exists between the mucous membrane of the alimentary canal and the skin, and the resemblance between them in anatomical structure, an especial derivative influence has been attached to the operation of emetics. Of this Alibert remarks as follows: "This intimate correspondence of the mucous membranes and of the skin produces two opposite and successive movements in the animal economy, when vomiting is produced. Buchner, with other physicians, has pointed out, for example, that at first the humors are directed suddenly towards the centre of the digestive organs, while there exists a state of constriction upon the external surface of the body; but soon the cutaneous exhalants relax, and then they obey an opposite reflux, from which considerable sweat results. This balancing between the central forces and those of the periphery is usefully considered. It suggests the method of cure of a multitude of diseases."* The free perspiration which follows the employment of emetics would appear, however, to be independent of any sympathetic connection between the two surfaces, and to depend upon the general depression of nervous action in its effect on capillary circulation.

In the treatment of mania, emetics have been employed under the impression that they concentrated new excitement in the stomach, and were thus therapeutically revulsive. Whatever advantage, however, may be derived from this plan of treatment must have a wider range of explanation than that afforded by revulsion. Other modes of operating that have been discussed as pertaining to emetics are most probably those that are efficient.

In order to subdue a furious fit of excitement in maniacs, emetics may be resorted to with advantage. Dr. Pritchard has observed them to produce calmness and a mitigation of violence, their exhibition being followed by a restoration of sleep and tranquillity.†

In delirium tremens the use of emetics originated with Stoll. This was the practice introduced into Philadelphia by the late Dr. Joseph Klapp. In certain cases where the stomach is foul and disordered, with a fuliginous condition apparent, it has its advantages.

In treating wounds of the head, emetics were recommended by Dessault, who viewed them as revulsive from the head, as diffusing excitement throughout the economy, and as impressing the functions of the liver.

Means of aiding the Operation of Emetics.—The introduction of fluids into the stomach when an emetic has been given is an old custom, under the impression that it is necessary to "wash out" the organ, or cleanse it of all offensive materials. If there be irritation of the stomach from the presence of such materials, and a tendency to nausea, large quantities of warm water, by distending the organ, will induce the result of vomiting and consequent relief. To aid in the operation of an emetic, the same practice may be resorted to. Insipid substances in solution, as the gummy or mucilaginous, are resorted to, or even oily fluids. Warm water in itself excites nausea and vomiting, and there are few persons who can take a large draught without this effect. The bitter infusions, drunk freely in quantity, will answer the same purpose.

A consequence of free dilution which should be adverted to is, that by washing out the stomach thoroughly the offending matters are dislodged, and the organ can return to a quiet state without being further disturbed. The retching that continues sometimes is due to the retention of some offending matter in the stomach, and hence, when the operation is thus aided, this retching is relieved. This does not apply in all cases, as the impression that has been made upon the brain and nervous system may be the cause of continued retching, and in this consists the difference between emetics. The sedative articles are most persistent in this respect.

Another result of free dilution may be the conveyance of the article into the alimentary canal, by which a double mode of operation is effected. In the administration of emetics, the subject of the effect of fluid should be duly considered, free evacuation being promoted by it. Should it be desirable to limit the action to the stomach or contiguous viscera, or maintain nausea, restraint must be put upon the quantity allowed to be taken.

The views of Huxham with respect to the use of fluids are worthy of consideration. Speaking of emesis in fevers, he says, "The method of vomiting by mere warm water I do not approve of, as you are oftentimes obliged to swill down immense quantities before you can raise the vomiting, which sometimes overloads the stomach to such a degree that its force is not sufficient

* Nouveaux Elémens de Thérapeutique et de Matière Médicale, par J. L. Alibert, Paris, 1826, tom. i. p. 218.

† Cyclopædia of Practical Medicine, vol. ii. p. 860, Eng. ed.

for the force laid upon it, and cannot reject it [*i.e.* the water]; so that the more you drink, the less capable it is of doing its office." "In all cases, therefore, if no vomiting follows after having drunk a pint or two, solicit a discharge with your finger or a feather; and by all means beware of that deluge of drink which is too often very preposterously given."* He compares an over-full stomach to the same condition of the bladder, by which inertia is produced.

Contra-indications to the Administration of Emetics.—Where there is decided irritation or inflammation of the stomach, the use of emetics is clearly interdicted. In the case of corrosive poisons, the stomach is either intensely irritated or inflamed, and the efforts of nature made with a view to the expulsion of such articles need only to be assisted by emollient fluids to secure this end and at the same time entail the least damage to the organ. Where irritation or inflammation occurs idiopathically or in connection with disease, the question which was warmly debated, and which gave rise to strong expressions, was the propriety of administering emetics under any circumstances. Broussais assumed the position that all fevers were dependent upon gastritis, and hence the treatment was to be such as would subdue this inflammatory state of the stomach,—as bleeding, leeches to the epigastrium, and diluent drinks. He stigmatized the treatment by emetics and purgatives as incendiary,—as productive of an aggravation of the inflamed condition of the organ and a stimulus to the fever. This assumption has not been borne out by the experience of physicians of previous times or subsequently, which, on the contrary, has confirmed the efficacy of the practice in many cases of emptying the stomach in the early stage of an attack. This applies more especially to the bilious and remitting fevers, which are attended with the disturbance of the stomach and associate organs specified in connection with the indications. The discharge induced from the stomach and other organs is a means of relief to the engorged condition under which they labor, as well as to the congested condition of the portal circle. Emetics in themselves are no source of irritative fever, and their employment cannot be accused of such a result; but, as enjoined by Dr. Chapman, at all times great circumspection is required. Should there be decided evidences of gastric or duodenal irritation or inflammation, determined by red, dry lips and buccal membrane, by a contracted, pointed tongue, especially red on its edges and point, dry and splitting, by thirst, and a feeling of warmth in the epigastric region, which is sensitive to pressure, emetics are uncertain, dangerous, and often pernicious. There may be an aggravation of the local symptoms, and great systemic disturbance, involving the other organs, especially the brain and heart, in the increase of irritation, with fever and accompanying functional derangement. At the time so violent an attack was made upon the use of emetics in fevers by Broussais and his followers, with their entire interdiction, the distinctions between their several forms had not been accurately made; and hence arose the error of using such medication indiscriminately, and the evil results from the practice. This is apparent from the remarks of Barbier,† who wrote before this subject was clearly elucidated.

Determination of blood to the head is a contra-indicating circumstance. It is easy to understand the reason of this when reference is made to the mode of operation pertaining to an emetic. The suspension of respiratory action and retention of air in the chest have the tendency to interfere with the return of blood from the brain; the capillary vessels of the lungs are pressed upon, and impeded circulation of blood occurs in them; while finally, in the act of vomiting, when the abdominal muscles are in full operation, and just as the larynx gives way, the full force of the pressure is brought to bear upon the return vessels of the head. An exaggeration therefore of the determination to the head which flushes the face and injects the eyes may rupture a vessel in the brain. Where free vomiting occurs with discharge of considerable quantities of fluid, which may be furnished by drinks, such accident will be less likely to happen.

In disease of the heart, or aneurisms, the use of emetics is interdicted. They are dangerous remedies in cases of hernia, and should also be avoided in pregnancy, as abortion may be brought on from the persistency of compression on the gravid uterus. Prolapsus uteri may also follow their use. The counsel is given by authorities not to administer emetics during the menstrual period. Where inflammation of the peritoneum exists, the danger presents itself, in the employment of emetics, of mechanical violence done to this tissue by the pressure upon the bowels. At all events, the pain may be much aggravated, and the sufferings of the patient increased, if they be improperly used. The same may be the case in enteritis; and this cause of interdiction may be presented in the treatment of dysentery. In the course of typhoid fever, the occurrence of vomiting may occasion perforation of the intestines. Some other dangers may be alluded to when summing up the risks connected with the employment of emetics. From the exhaustion and syncope induced where the blood is in the peculiar condition fitted for their formation, heart-clots or emboli have resulted. In the treatise of Barbier, some serious cases of gangrene are stated as resulting from the use of emetic substances. These can only be explained under the supposition of emboli in the vessels of the parts affected.‡ Where there is exhaustion from disease, or constitutionally, there is a clear interdiction of them. Dr. Paris alludes to a case where a patient laboring under phthisis was so prostrated by an emetic, with the occurrence of syncope, as not to react from the operation.⁂ Cases of intolerance of vomiting from idiosyncrasy are occasionally met with, where violent spasms of the stomach or intestines are excited, or where irregular anomalous symptoms present themselves, which if anticipated would preclude the use of emetics.

Means of arresting Vomiting.—The axiom that "vomiting is cured by vomiting" must be received with limitations: it has but partial application. Where oppression and distress of the stomach arise, with the other symptoms that have been specified, from the irritation of offending matters in the organ, the removal of these is followed by relief and a return to quiescence. If, however, either irritation of the mucous surface is left, or the influence of the emetic is so profoundly impressed upon the brain or nervous system as to occasion the prolonged efforts to vomit, a system of treatment must be adopted which is based upon a full appreciation of the cause of their continuance; and hence the diversity of measures that have been proposed to check vomiting.

Where irritation exists, the exhibition of cold demulcent drinks, or antacids, as lime-water and milk, is attended with advantage. An acid condition of the secretions, as exhibited in the dejections, would seem to indicate the use of alkaline remedies. Where vomiting continues from the derangement of the nervous system, obtunding the nerve-centres and placing the whole nervous system in a state of forced quiescence will have the effect of checking vomiting. This is done by the use of opium or its salts, either by the rectum or hypodermically. This plan was adopted by Sydenham, who administered opium after an emetic. Where

* Essay on Fevers, loc. cit.
† Op. cit., vol. i. p. 342.

‡ Op. cit., vol. i. p. 318.
⁂ Paris, Pharmacologia.

prostration exists in connection with this deranged nutritive condition of the nervous centres, the propriety of using stimulants is clearly presented; and hence the use of alcoholic stimuli, of ethers, or of the aromatics. Sometimes a mild bitter will answer the purpose,—as a weak infusion of calumbo, or cascarilla, or even of Peruvian bark. Carbonic acid is a remedy that is appropriately appealed to in certain cases; and this may be afforded in combination with neutral or effervescent mixture, or the effervescing wines, as champagne, which latter has a double mode of operation; or the use of carbonic-acid water, either with or without an aromatic, is convenient. The application of a stimulating derivative may be used where the skin is cool and moist, as a mustard-plaster to the stomach, which has a reactive effect upon the nervous system, and diffuses the circulation of blood.

Irrespective of nausea and vomiting being occasioned by the use of emetic articles, they may be present as the symptoms of disease. Where they are evidently due to the congestion of the abdominal viscera, the use of cups or a blister to the abdomen, or even the application of leeches, will be serviceable. In this case vomiting is treated by alleviating a diseased state on which it depends, and other measures that are appropriate may be directed immediately to the stomach.

It is a fact that has been overlooked, that nausea and vomiting may be kept up by debility; and in these cases there is exhausted nutrition of the nervous excito-motor tract of the brain. In association with this state of the central nervous masses there is an inordinate susceptibility to reflex actions from the peripheral terminations of the sentient nerves, and hence a susceptibility to the least impression. This may occur from disease which has wasted the forces of life and brought down to the lowest ebb the nutritive operations of the nervous system. It is exhibited in the later stages of cancer and malignant affections, as well as phthisis. It sometimes arises from a predisposing constitutional condition in those whose brains are not duly nourished, and who, when attacked by affections which reflect their influence, exhibit the inordinate sensitiveness by nausea and vomiting. Vomiting is sometimes an attendant upon albuminuria. This has been looked upon as a symptom of uræmic intoxication; but it should rather be regarded as an evidence of the exhaustion of the system by the long-continued drain of albumen, whereby the nourishment of the brain is impaired, which renders it the centre of inordinate reflex activity. Vomiting in albuminuria is essentially brain-vomiting. The reflex disturbing influence frequently comes from the uterus in females, or from the urino-genital organs in males. It cannot be said that the stomach is more than sympathetically involved.

One prominent example may be pointed out, and that is in connection with pregnancy. The vomiting of pregnancy, for the most part, may be alleviated by stimulants or by sedatives, as by camphor and ammonia, or by hydrocyanic acid, as is the usual practice with physicians; but in certain cases of tendency to exhaustion it is maintained, irrespective of the reflex influence of the gravid uterus, from the interference with digestion and the starvation thus induced. The longer vomiting continues in these cases, the greater is the cause for its continuance, until death is threatened from inanition. There is but one method of arrest under these circumstances, and that is radical, directed to the maintenance of due nutrition in the central nerve-masses, to be accomplished in every way that ingenuity can devise. An appeal to the bowels presents the best substitute for the stomach, and by throwing concentrated essences of animal substances, combined with stimulants and tonics, into the bowels, the patient may be saved who otherwise would be lost or be forced to undergo premature delivery. For nourishment, and with the intention of impressing the system, the most certain remedy is beef-essence, as much as will be retained in quantity, with brandy and sulphate of quinia thrown often into the bowels.

When vomiting is maintained from a purely reflex source, the removal of the derangement that occasions it is the sole resort. In cases of prolapsus or retroversion, the employment of mechanical measures has been found effectual.

When vomiting arises from the brain, the remedies to be employed should be directed to that organ,—as blisters to the back of the neck.

There is a means of relieving the stomach which, in cases of engorgement of the portal circle, is highly efficacious, especially when attended with constipation; and that is by unloading the bowels. This is done by small doses of mercurials gradually administered, or by enemata.

Combination of Emetics with other Medicinal Articles.—As the intention of administering emetics is to evacuate the stomach, they cannot with any advantage be combined with articles not of the same class. The union of different emetics may be advantageously practised, as in the case of ipecacuanha and tartar emetic, or sulphate of zinc, where the one, being more intense than the other, may give force without increasing the danger of over-action. Where there is a union of these articles with those of other classes, as with expectorants or diaphoretics, it is with the design of obtaining their relaxing or sedative influences, and not emetic effects; they then become auxiliaries or adjuvants in carrying out a general indication.

With purgatives the class of articles under consideration are more usefully combined, with the view both to emesis and purgation; and hence the term emeto-cathartics applied to such combination. Calomel and tartar emetic constitute an effective association, when given in minute doses until nausea and vomiting are produced. This is a mode of thoroughly cleansing the alimentary canal. But, even without inducing vomiting, the presence of a small amount of a nauseant article in a purgative preparation will serve as an adjuvant; and this is frequently taken advantage of. Some of the noted purgative formulæ direct a small amount of tartar emetic or ipecacuanha to be used, with the object of obtaining better results from exhibition.

ORIGINAL COMMUNICATIONS.

A CASE OF FRACTURE OF THE LOWER JAW

TREATED BY THE INTER-DENTAL SPLINT.

BY HARRISON ALLEN, M.D.,
One of the Surgeons to the Philadelphia Hospital.

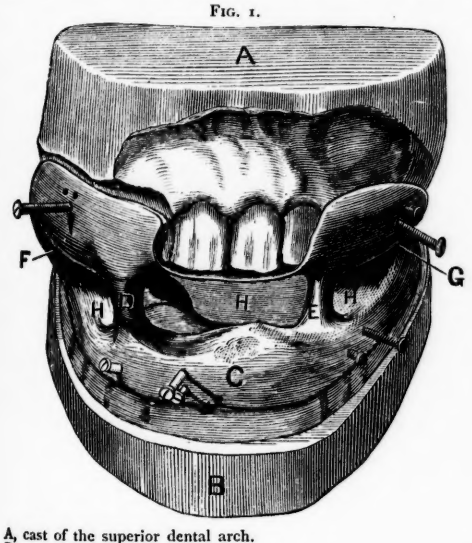
P. B., aged 23, a laborer, entered the Philadelphia Hospital September 2, 1871. Three days before, he had met with an accident, the exact nature of which was unknown. According to his own statement, "he had been knocked down by a locomotive." His face was much contused, and several bruises were noticed about his lower extremities. There was a perforating lacerated wound of the central portion of the fleshy part of the lower lip, and a ragged cleft through the upper border of the oral fissure. The lower jaw was fractured at the left horizontal ramus directly to the median side of the lower canine. The two central incisors and the left lateral incisor were lost. The median end of the left fragment of the jaw was drawn outwards; the correspond-

ing end of the right fragment was drawn inwards. The left angle of the jaw was depressed.

The general condition of the patient was bad. His complexion was sallow, his tongue dry, his pulse rapid, and his intellect—which was at all times dull—became noticeably clouded. Insomnia was absolute. It was thought necessary to order a liberal supporting treatment at once. Nothing was done to the jaw, save to attempt to hold the fragments in position with silver wire until the soft parts had so far recovered as to permit a chin-cap and bandage to be applied. But, in consequence of the semi-maniacal condition of the patient (apart from the mechanical difficulties always attending such cases), the wiring of the teeth was of no permanent use. A general anasarcous condition now announced itself. The skin became jaundiced, and there was complete retention of urine.

The use of the inter-dental splint now suggested itself to my mind as a means of holding the fragments in position without pressing upon the soft parts. Accordingly, on the 6th instant, Dr. J. N. Wunderlich, an ingenious dentist of this city, was requested to take an impression of the mouth preparatory to the manufacture of a vulcanite splint. The teeth were again wired together, the dental arch thus restored, and an impression taken in wax, from which a splint was prepared which held, as in one piece, both the upper and

FIG. 1.

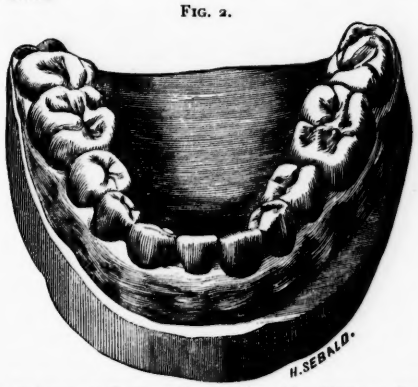


A, cast of the superior dental arch.
B, cast of the inferior dental arch.
C, the splint.
D, E, pillars of the splint.
F, G, the union of the two halves of the splint posteriorly.
H, H, H, the inter-dental spaces permitting the saliva to escape and the food to enter.

the lower jaw (Fig. 1), and at the same time securely approximated the ends of the broken bone. The apparatus was permanently adjusted September 25. It was for a time held in position by means of screws placed in orifices previously drilled in the enamel of the molar teeth, after the method proposed by the inventor of the splint, Dr. Gunning, of New York. But it was afterwards deemed advisable to pass bolt-like screws through the entire thickness of the splint, at points corresponding to the small normally-present spaces between the cervical portions of the crowns of the molar teeth. This modification held the parts as in a vice, and entirely removed them from the control of the patient. His attempts to tear the splint from his mouth, or to dislodge it by facial contortions (which attempts were limited only by his strength), proved ineffectual. An abscess formed October 10, at a point corresponding to the end of the larger (right) fragment. This was opened on the 12th instant, and a fragment of necrotic bone discovered within. It proved to be an exfoliation from the end of the right fragment at its basal portion. The opening, however, did not close, and in a few days another and larger exfoliation was removed, consisting of the remainder of the transverse section, inclusive of the septum between the two central incisors.

The general health of the patient now began to improve, and by October 15 the anasarca had entirely disappeared, and his reason returned; but not acquiescence in the plan which had been adopted for his relief. Notwithstanding that he was fed liberally upon animal broths, his complaints that he was starving were loud and unceasing. By the end of the twelfth week (viz., the latter part of December) the screws were loosened from the lower jaw, and the parts examined. To my disappointment, the fragments were ununited. The displacement, however, did not recur. The apparatus was immediately re-adjusted,—regardless of the remonstrances of the patient,—and retained until January 23 (about four weeks), when the parts, being again examined, were found firmly united. The stomach-tooth was loose. There being no prospect of its becoming fixed, it was extracted, when the cure was pronounced complete. Fig. 2 represents the inferior dental arch as it appeared at the close of the treatment, prior to the extraction of the left canine tooth.

FIG. 2.



Three teeth are seen between the first bicuspids. These are the two canines, and the right lateral incisor. The left canine was subsequently extracted. The fracture, therefore, had caused the loss of four teeth, viz., the canine, lateral and central incisor of the left side, and the right central incisor.

The patient, after serving as ward attendant for some time, was discharged, at his own request, April 7, 1872.

Remarks.—It is not likely that in this case any other form of splint than the one employed would have accomplished the result in a manner so satisfactory, if, indeed, it could have secured it at all. An external dressing could have been removed by the patient, unless his hands had been constantly tied. Apart from these difficulties, the inflammation attending exfoliation would have prevented the employment of a chin-cap and bandage. It will be remembered that Dr. Gunning employed the same method of treatment in the famous case of Hon. Mr. Seward.

The successful result in the case above recorded is in a great measure due to the unceasing attentions of Dr. Wunderlich.

THE EMPLOYMENT OF CAUSTICS IN THE AMPUTATION OF LIMBS.—M. le Dr. Aubert describes (*L'Abeille Médicale*, June 17; from *Le Lyon Médical*) a method of amputating limbs and of removing tumors by the use of caustics. He uses for this purpose a leaden pipe seven millimetres in diameter, from which he removes a portion of the circumference, so as to transform it into a trough. It is then filled with caustic, and accurately adapted to the periphery of the tumor or to that of the limb to be removed. In some cases these pipes may be passed into the tissues themselves, after the manner of the drainage-tubes of Chassaignac, and in this way the constriction of the tumor or of the limb may be made more complete. The caustic which Dr. A. prefers is the pâte de Canquoin.

ON SOME CASES OF EMPHYSEMA OF THE NECK

DUE TO LESIONS OF THE RESPIRATORY APPARATUS.

BY WILLIAM PEPPER, M.D.

EMPHYSEMA of the cellular tissue of the neck, under any circumstances a rather rare condition, is probably associated in most minds with mechanical injuries of the larynx and trachea. Although, however, it is true that such injuries of the upper air-passages as ruptures, fractures, or incised wounds are usually complicated with emphysema of the neck, it will be found that this symptom makes its appearance under many other and widely-different pathological conditions. The object of the present brief article is by no means to supply a description of cervical emphysema in all its relations, but rather to illustrate a few of its less common varieties, especially such of them as are associated with interlobular emphysema of the lungs.

The occurrence of emphysema in the neck is recognized by the same symptoms which indicate the presence of air in other portions of the subcutaneous tissue: a peculiar crackling on palpation, which is both heard and felt, and a swelling of the part. The condition may affect either one or both sides of the neck; and, in case both sides are affected, may appear simultaneously in them, or may be developed in one first, and subsequently extend to the opposite. There is, as will be seen, a certain amount of diagnostic value in the study of the symmetrical or asymmetrical distribution of the emphysema. The first point at which the air makes its appearance varies considerably: in some cases it is first noticed below the clavicles; in others it appears in one or the other supra-clavicular or submaxillary space; while in most instances it shows itself in the supra-sternal notch, and spreads thence. The distance to which the emphysema extends, and the degree which it attains, are equally variable: at times forming a small and circumscribed crepitant swelling; at others it spreads rapidly up the neck, involving the face, causing frightful deformity, while at the same time it may extend down the arms and over the trunk to the lower extremities, so as to become altogether general.

Emphysema of the neck may proceed from traumatic causes, or may occur in the course of some disease, acute or chronic, of the respiratory organs. In either case, the point where the air escapes into the cellular tissue may be in the larynx or trachea, or in the substance of the lungs. The discussion of this latter class of cases is associated with the question of interlobular emphysema of the lungs, and its consideration will be found to involve some points of marked pathological and clinical interest. In cases of the former variety—where the lesion is situated in the laryngo-tracheal tube—the seat and nature of the disease are usually clear, and the mode of production of the emphysema is evident. The most familiar of such lesions—to which no more than a mere allusion will be made here—are incised wounds of the larynx and trachea, whether accidental or intentional, as in the operation of laryngo-tracheotomy, or in attempted suicide; fractures of the larynx or ruptures of the trachea from external violence, with laceration of the mucous membrane and walls of the air-passages, but not necessarily accompanied with external opening through the skin. Some authorities would class under this head the very interesting variety of cervical emphysema which occasionally occurs during parturition; but, as I am inclined to regard it as due to rupture of the pulmonary air-vesicles rather than of the trachea, I shall for the present postpone its consideration.

There are a few cases on record in which emphysema of the neck has made its appearance in the course of ulcerative disease of the larynx or trachea, and where post-mortem examination has revealed the existence of a perforation of the laryngo-tracheal tube, enabling the air to escape directly into the subcutaneous cellular tissue. In the following case, which I observed in the year 1865, although the evidence of post-mortem examination is wanting to confirm the view, the lesion was probably of this character.

Case I.—E. S., aged 21 years, was admitted into the Pennsylvania Hospital August 28, 1865. There was no evidence of any hereditary tendency to disease. He had followed the sea for many years, and had enjoyed excellent health until seven months previous to admission, when he was attacked with diarrhœa, which had persisted with varying severity. The stools were at times very numerous,—as many as fifty in twenty-four hours. During this time there was also occasional cough, without hæmoptysis, and with but little white mucous expectoration. He had never had any unusually violent spells of coughing, and had neither strained himself nor been wounded in any way. On admission, he was found considerably emaciated; his countenance dull, speech slow, voice low; but the mind was clear, and the memory good. The pulse was compressible,—ninety in the minute; there were no signs of heart-disease. The tongue was moist and slightly coated. An irregular phagedenic ulcer was discovered between the palatine arches on the left side. The abdomen was tender on pressure, but not distended. The bowels were opened eight times in the twenty-four hours, the passages being small, thin, and free from blood. Cough was infrequent, with little tough mucous sputa. He complained of an uncomfortable feeling along the upper two inches of the right edge of the sternum; and on palpation there was found to be marked subcutaneous emphysema extending over the neck and supra-clavicular spaces, where it was most extreme, and nearly symmetrical on the two sides, and thence over the whole anterior aspect of the right side of the thorax, while on the left side it was limited to the infra-clavicular space. It did not extend to the arms, face, or abdomen. Percussion-resonance was deficient over the right apex, with prolonged and blowing expiratory murmur and increased vocal fremitus. A fine, dry, crepitant râle (like the sound produced by crumpling tissue-paper) was heard over the anterior surface of the right side of the thorax; but this was evidently due to the emphysema of the subcutaneous connective tissue. No friction-sounds were heard. The expansion of the right lung was perfectly free. The percussion-resonance and respiratory murmur were elsewhere normal. The ulcer on the left tonsil was touched with a solution of nitrate of silver. He was put upon the use of cod-liver oil; and at first sulphate of copper, in doses of one-fourth of a grain every two hours, was given to check the diarrhœa; but in about ten days this was changed for small doses of opium and bichloride of mercury. This latter was administered under the view that he was suffering from the manifestations of secondary syphilis; although he would not confess to the primary disease. The emphysema disappeared entirely in the course of ten days after his admission. The faucial ulcer healed rapidly. The diarrhœa improved, the stools diminishing in number to four, and finally to two or three, in each twenty-four hours. He gained strength, and, in the course of the thirty-eight days that he remained in the hospital, increased in weight twelve pounds. At the time of his discharge there was no trace of emphysema of the neck. There was, however, still impaired percussion-resonance over the apex of the right lung, with blowing, prolonged expiratory murmur, and increased vocal fremitus and resonance; although these signs were less distinctly pronounced than at the time of his admission. There were no râles or friction-sounds to be heard at any point.

It may very plausibly be objected that, in the absence of any decisive proof of the position of the lesion in this case, it is too much of an assumption to fix it in the larynx or trachea, since the existence of partial consolidation at the right apex, and the symmetrical development of the emphysema, both suggest the possibility of the escape of air having occurred from ruptured air-vesicles in the right lung. I am, however, strongly inclined to adhere to the opinion first expressed. The physical signs of disease at the right

apex did not give the slightest indication of the presence of softening, such as might possibly have led to the occurrence of interlobular emphysema of the lung,—a condition which, as we shall see, may be followed by external emphysema. Nor had there been at any time during the course of the case coughing-spells of such violent character as to endanger the rupture of any of the pulmonary air-vesicles. I attach little importance to the fact that there were no direct physical signs of interlobular emphysema present, since clinical experience has shown that this condition may exist without either the "dry crepitant râle with large bubbles" or the peculiar friction-sound which were attributed to it by Laennec. The symmetrical distribution of the emphysema is much relied on by some authorities, especially by Demarquay (see his exhaustive work, "Essai de Pneumatologie Médicale," p. 193), as a proof that the air has escaped in the pulmonary tissue, and has traversed the mediastinum to reach the neck, so that it invades this part uniformly.

This cannot, however, be regarded as a point of very great importance, since it is evident that if a perforation should occur near the median line of the trachea on its anterior or posterior surface,—which is indeed the most frequent seat of ulceration,—the resulting emphysema would probably be symmetrical; while, on the other hand, there are cases recorded in which the external emphysema has been much more extensive on one side than the other, although its cause was undoubtedly the rupture of pulmonary air-vesicles.

In favor of the view that the emphysema in the case just reported was dependent on ulcerative disease in the trachea, may be adduced the marked evidence of wide-spread disease of the mucous surface, as shown by the large ulcer on the tonsil, and by the persistent diarrhœa; the character of the cough; the probability that the affection of the apex of the right lung was due merely to inflammatory action of a low grade; and; finally, the absence of any appreciable cause of interlobular emphysema of the right lung, such as violent efforts in coughing, or the existence of spots of tuberculous softening from which the air might escape into the subpleural or interlobular connective tissue. I have already stated my belief, which is certainly supported by the rapid result of the treatment employed, that the wide-spread affection of the mucous follicles in this case was dependent upon a syphilitic taint of the system.

I propose in the next place to report, with brief comments, the histories of a few cases of external emphysema dependent upon lesions of the pulmonary tissue,—a subject of interest, not only as including the question of interlobular emphysema of the lungs, but from its bearing upon the etiology of ordinary vesicular emphysema.

(To be continued.)

DOUBLE PREGNANCY, WITH ONE SAC AND ABNORMAL INSERTION OF THE FUNIS.

BY W. H. WINSLOW, M.D.

I HAVE had a curious case, which presented features rare in the annals of obstetrics, and hence appears to be of sufficient interest to merit its being recorded.

Mrs. B., æt. 24, of nervo-sanguine temperament, slight in form, and pregnant for the fourth time, was taken with uterine pains, simulating labor, at 10 A.M., February 1, 1872, and at 3 P.M. discharged about half a pint of liquor amnii. As the pains were not frequent or severe, she hoped, for economy's sake, to get through without a physician, and did not call me until the next day, when I saw her at 11 o'clock A.M. The pains had increased in frequency and violence, and the patient was much exhausted. She dated her pregnancy from the early part of October. She had had two abortions previously, at three or four months, and had one child living, aged six years. A digital examination showed the os to be well dilated, slightly shortened, soft and dilatable. I could detect only a spongy mass, that filled the mouth of the uterus and was impelled against the finger during the pains. Fluid extract of ergot was administered in teaspoonful doses every half-hour until three had been taken, with two cups of hot tea.

The pains soon after increased in severity, and I extracted a congested dead fœtus from the vagina and tied the slender cord. In about fifteen minutes the woman said she felt the after-birth, and, getting hold of it by deep burrowing with the hand, I drew it out, and, as it cleared the vulva, there was a voluminous discharge of water, and I found another fœtus kicking among the entire membranes. The necessary attentions were given to the mother, and then the product was carefully examined. In multiple births, the children are so commonly of an imperfect or irregular development, that I was not surprised to find the first-born's head of an idiotic, nearly anencephalous shape. There were dark patches of extravasated blood about its neck and breast, but it was not decomposed: hence its death probably occurred after the first discharge of waters the previous day. The other fœtus was well formed and healthy in appearance, and from the dimensions and development of both I judged them to have had an intra-uterine existence of three months or more. The sex was well defined: both children were females. There was only *one placenta*, large and heavy, which had nourished both fœti, and a *single sac* of rather large dimensions hung from its edges, with no break in the continuity of its circular attachment. There was a slightly-raised line across a one-third segment of the intra-membranous surface of the placenta; yet it was gelatinous, and homogeneous with the reflected portion of the amnion. It would not be unreasonable to suppose that the applied sides of the primitive sacs had been absorbed, destroying the wall between the fœti; the edges becoming fused so perfectly together, as had occurred between the placentæ, as to defy ordinary inspection.

Two discharges of the waters, with such an interval, indicated two sacs; yet this is accounted for by supposing a rapid contraction of the uterus after the first discharge, forcing its contents into and blocking up the passage: hence the mass felt in the os at the first examination. The cord of the healthy fœtus terminated in the ordinary way, a little outwards from the placental axis, but nearly in the middle of the two-third segment, as indicated by the raised line; while the other was attached in a very curious manner. Within three inches of its proximal end it was divided into its three branches, or vessels, each surrounded by a gelatinous coat; and then, *entirely distinct*, they passed along and pierced the inner layer of the amnion two and a quarter inches from the placental edge; dividing into several branches, which ramified between the membranous layers and finally entered the placenta, being distributed to the *one-third segment of the placenta* previously mentioned. This, to my mind, is conclusive in regard to a junction having taken place between two separate membranes at a very early stage of gestation.

It is worthy of notice that this anomalous cord belonged to the imperfectly-formed lifeless fœtus. A single sac in multiple births is an occurrence exceedingly rare and interesting. M. Solte, of Gheluwe, has described one such case, and there are no doubt others upon record; but I have not had an opportunity to look up the literature of the subject. Benkiser has collected, in an inaugural thesis, many examples of a membranous insertion of the cord; and probably every

accoucheur of much practice has met with numerous instances, which he has not considered of sufficient importance to report. In view of the almost perfect development of the products of conception in extra-uterine fœtation, we are prepared for any phenomena connected with the generation of the species; and even Darwinism becomes no longer a *reductio ad absurdum*.

2039 Fitzwater Street.

A CASE OF POISONING BY CORROSIVE SUBLIMATE.

COMMUNICATED BY FRANK WOODBURY.

In the effort to commit self-destruction, patients frequently, in their anxiety to attain the desired result, take a dose of poison so large that the stomach refuses to retain it. In this manner a large amount of a drug may produce a nugatory effect, where a much smaller amount would have proved rapidly fatal. The case to be described illustrates this apparent paradox, and possesses in addition a peculiarity which invests it with special interest. This consists in the spontaneous recovery from the primary effects produced by swallowing a drachm of the corrosive chloride of mercury in alcoholic solution. Although no antidote or emetic was administered for at least three hours after taking the poison, yet the patient survived its immediate effect, became salivated afterwards, and finally died on the eighth day from asthenia and nervous exhaustion.

Anna H., æt. 33, a native of Scotland, was admitted to the Pennsylvania Hospital on May 11 (Sunday), at 4 P.M. A note from Dr. W. W. Keen stated that the patient had swallowed about two ounces of a liquid used for destroying bugs, which contained thirty grains of corrosive sublimate to the ounce of alcohol. He had not been called until 1 P.M., although the poison had been taken some hours previously. After learning the strength of the solution from the apothecary who prepared it, he gave her eggs immediately, as an antidote. She vomited freely, bringing up blood in considerable quantities. After giving her two dozen eggs, she was sent to the hospital, where ten more were given, all of which were vomited in a coagulated state. She was then ordered a teaspoonful every half-hour of a mixture of the yelk of two eggs with eight ounces of olive oil, and put upon the use of opiates.

May 13.—The diarrhœa, tenesmus, and bloody discharges from which she has suffered since her admission, are gradually subsiding. There is tenderness in the abdomen and in the hypogastric region, but none over the stomach. On being questioned, she states that she does not feel any pain in the stomach, but experiences an uncontrollable nausea on taking food. She complains of inability to retain nourishment, even vomiting beef-tea and milk; of a constant metallic taste, and of a feeling of soreness in the mouth which extends down the œsophagus. She says that she wakes from sleep at night with a start and a sensation as if falling, and that she has flushes of heat, and feels weak; but her mind and memory are unaffected. Pulse 84, feeble and compressible. Hands clammy.

She states that, in a fit of desperation after a quarrel with her husband, she determined to commit suicide. Going to her room without eating any breakfast, having taken merely a glass of water, she swallowed the contents of a bottle of a solution of corrosive sublimate she used for domestic purposes and kept in a four-ounce vial, which was more than half full at the time. Vomiting began immediately, and she fell into a stupor. This occurred between 8 and 10 A.M. She was finally discovered by a fellow-boarder, who summoned Dr. W. W. Keen, after which she was taken to the hospital.

May 15.—She has slept better, though still quite weak, and troubled with the burning sensation in the mouth and throat and with difficulty of deglutition, her stomach still rejecting food. She does not suffer so much with tenesmus, and the diarrhœa and bloody discharges have ceased. The tongue is thickly coated; the breath is fetid and offensive; and the gums are swollen and tender, showing the constitutional effect of the drug.

On May 18 her pulse failed, and she sank rapidly, dying about 6 P.M.

At the inquest, the post-mortem proved the existence of acute gastro-enteritis. The stomach was softened, inflamed, and discolored from extravasated blood over its entire mucous surface. Several large patches of inflammation were found in the duodenum; the other organs were healthy. Death was evidently due to asthenia, caused by the powerful impression produced upon the nervous system and the grave involvement of the digestive organs.

In reviewing the case, the following considerations are suggested:

I. The drug was in sufficient quantity to exert its corrosive action, as soon as administered, over the entire mucous surface of the stomach. Did not the blood, which was thrown out in large quantity, act by means of its albumen and fibrin as a physiological antidote to a considerable portion of the poison which still remained after vomiting?

II. Did not that portion which was absorbed exert a direct depressing influence, by its power of altering the composition of the red blood-corpuscle and reducing its affinity for oxygen?

III. Was not the absence of any pain in the stomach a grave symptom, as indicating the destruction of the mucous coat and loss of vitality of its nerve-fibres by the primary corrosive action of the poison?

NOTES OF HOSPITAL PRACTICE.

ORTHOPÆDIC HOSPITAL AND INFIRMARY FOR NERVOUS DISEASES.

(1701 Summer Street, Philadelphia.)

SERVICE OF DR. S. WEIR MITCHELL.

Reported by Dr. Wharton Sinkler.

This clinic has furnished a considerable number of cases of neuralgia, hemicrania, and pains which Anstie would not permit us to classify as true neuralgias. The following histories, with Dr. Mitchell's remarks upon them, may possess interest for the readers of the *Times*:

Louisa N., æt. 35, married, applied for treatment at this institution, January 10, 1871. She has always been healthy, with the exception of an attack of rheumatism three years ago. Two months ago she was seized with facial neuralgia, which was first felt in the afternoon. The attack was preceded by a chill, and lasted between one and two hours. After the severity of the pain had subsided, the whole face became flushed. The neuralgia began in the gums, on both sides of the jaw, and extended into the temples and head. Since this time she has had an attack every day. The neuralgia does not come on at the same hour, but on some days the attack begins in the morning immediately after rising, and on others not until 4 P.M. It is always preceded by a chill and followed by flushing of the face and general heat. During the latter part of the attack there is dimness of vision, both eyes being equally dimmed. General health good. No dyspepsia. Eyesight and hearing both good. No cardiac disease. There is no blue line on the gums, and she has never received any blow or injury about the head. There is tenderness on pressure over the vertex and over both supra-orbital nerves, but none over the spine.

She was ordered to take sulphate of quinia, gr. xv, every night, and liquor potassæ arsenitis, gtt. v, three times a day.

On January 14, she reported that the pain had been less severe since the treatment was commenced. There was ringing in the ears from the quinia, and the dose was therefore

reduced one-half. The dose of Fowler's solution was increased one drop three times daily.

On January 17 she was greatly improved, having been entirely free from an attack the day before. After this time there was no return of the neuralgia.

In this case there was absolutely no known cause of disease, nor was she out of health or anæmic when first seized. Moreover, except for the chill, there was no evidence that she had suffered from ague-poison. It was not considered malarial, since it is rare to see a disorder of that nature return so irregularly, while the chill and fever and daily return belong not only to many common neuralgias, but even to some of distinct traumatic origin. Dr. Mitchell remarked on a case of nerve-wound in which there was each morning an ague chill, and each evening a chill which ushered in a neuralgic attack: the latter chill neither quinia nor arsenic relieved. It was also remarkable that the intermittent neuralgias are quotidian unless of malarial origin, when they may assume any of the types of recurrence. Regularity of daily-repeated attacks does not authorize us to consider them due to ague-poison, nor does the co-existence of chill, fever, and sweat, however marked, greatly aid us to settle the cause of the disease.

It was once believed that the curative power of quinia in such cases of neuralgia as recur daily, either at or near a set hour, or even once daily without regularity as to hour, was also some proof of the malarial origin of the affection. Educated physicians in general have abandoned this view; and Dr. Mitchell added that it would be found that the farther from the head are the neuralgic seats, the less power has quinia to control the attacks. On the other hand, he has seen the most well-marked regularly intermittent neuralgias of the fifth nerve yield as readily to simple galvanic treatment as do others of more irregular type. The present case was a fair instance of irregular intermittent neuralgia of the trifacial, yielding to antiperiodics. It was remarked that it is rare to see the pain start from the gums when, as in this case, the teeth are sound; but the starting-point of the pain is often of but little moment, or may even serve to mislead, as in the following case, which was considered remarkable as an example of the necessity, in a case of neuralgia, to examine every organ.

I. C., æt. 52. A man in apparently sound and even robust health. He had lost the last of his teeth three years ago, but could not wear artificial teeth because of the pain they gave him in the upper gums. He was attacked soon after losing his last tooth (an incisor on the right side above) by severe paroxysms of pain, which started from the right upper jaw in or about the point where the gum was most tender on pressure. The pain ran up to the infra-orbital notch, and when most severe broke out also in the supra-orbital distribution. The attacks lasted from a few minutes to a quarter of an hour. On careful examination, the point of exit of the infra-orbital nerve was found to be tender, as was also the gum below it. He had, when seen, twenty or thirty attacks every day. Loud talking was sure to cause them, but the act of chewing food was of all means the most sure to provoke a severe paroxysm. It was found that the pain was not produced by pressure at any point.

Every organ of the body seemed to be healthy in action except the stomach, which was reported as being subject to daily acid dyspepsia. A great variety of treatment, local and general, had been used by many physicians, but so far none had been of service. Previous to using galvanism, Dr. Mitchell directed an absolute milk diet and the use of bismuth and pancreatic emulsion. Immediate relief ensued, and after a month all treatment was abandoned, the patient being well. He has now passed eighteen months with no return of pain.

The remote cause of the condition of nerve on which the neuralgia depended was certainly induced by disordered digestion, and when this was removed the causes which before were competent to evolve an attack ceased to have power. In connection with trifacial neuralgia, originating in or about the alveolar processes, it was observed that such attacks were apt to occur in the old and toothless, and that the site of the worst pain, and often its starting-point, is marked by a hardening of the gums, and a thickening either of the periosteum or of the bone of the lower jaw. Such changes have been assumed by surgeons to be the cause of the neuralgia, and have led to neurotomy as a means of relief. The hyperplasia in question Dr. Mitchell regards as most often a consequence, and not a cause, of the disease; and he does not consider neurotomy ever justifiable until galvanism has been thoroughly tested.

The following striking case is the more interesting, because it took place in a woman already suffering from general senile changes.

Mrs. P., æt. 64, a gray-haired woman of strong frame, the mother of eleven living children, and with no previous neurotic hereditations, was well until three years ago. She has been at times, and still is, dyspeptic, but the stomachal trouble does not seem to be related in any way to the neuralgia. She has had no recent losses of blood, and was in her usual health when the pain first began. It came on in March, 1869, and may have been due to exposure to a stormy east wind. At first the pain lessened and the attacks became rare, and at last ceased in summer; but in 1870 and 1871 there has been no such marked relief. The pain consisted, and still consists,—for the type is unchanged,—in a horrible pang which starts in the left side of the lower jaw, and seems, as she says, to run along both ways for an inch. The agony seems to the bystanders fearful as she utters a cry and rocks to and fro, or buries her face in her lap, at the same time firmly pressing on the left supra-orbital nerve. This, she insists, always gives her some ease, if the compression be applied early in the attack. This statement proves to be correct, and it is found necessary to press accurately on the nerve to effect relief. The attacks recur every three to five minutes; are made worse by talking and eating; cease in sleep, or are unfelt; are worse in bad winter weather, and best in moderate summer temperatures. Her teeth have been pulled out one by one, as they fell under suspicion of being breeders of neuralgia. Upon examination, the mucous membrane of the left side of the lower jaw was found to be red and swollen, and the veins along the tongue enlarged. The gum and even the bone at the seat of pain were hard, swollen, and tender, and on the left side of the tongue the sense of taste was slow and uncertain; but there, as well as on the lips and chin, the tactile sense as measured by the compass-points was normal. No permanently tender spots were discovered at any of the usual localities, neither was there any tic. Dr. Mitchell remarked upon the fact that the patient came from a malarious neighborhood, and had had chills lately, which in no way affected her pain. All treatment had long since been abandoned as hopeless. At the close of her examination, and while she was suffering frequent attacks of pain, the positive pole of a constant-current battery was applied on the jaw over the painful point, and the negative over the nape of the neck. After a few minutes the pain suddenly lessened, and, ceasing, did not recur for some hours. The sitting was repeated that evening, and it was found that the direction of the current made no difference in the result. Whether the current passed up or down, the pain was relieved by it. As the sittings were continued, the neuralgia returned,—at first, several times a day; then, after the sixth application of galvanism, once a day.

From that time she suffered no further pain so long as she could be induced to remain in the infirmary. Her form straightened, her great physical vigor came back, her appetite grew, and she went about the house busily assisting the nurses and matron,—a strange contrast to the peevish, agonized, worn, and haggard sufferer who had come to us a fortnight before. Two months have passed without a return of her malady, and she has just written (June 15) from her home in Maryland to report herself as doing well in every respect.

In this case no treatment was used except that by the galvanic current. Not more than fourteen Callaud cells were employed, and usually only eight or ten. Most of our neuralgic cases are seen among the poor, and are related to a history of blood-losses or anæmia from some cause. It is usually necessary to use tonics, especially cod-liver oil; but there seem to be cases, such as Mrs. P.'s, in which the pain is the depressing cause, and the battery, by easing this suddenly, causes what might almost be called an outbreak of health. Dr. M. remarked on this fact, and, while insisting with modern neuro-pathologists that the cause of the pain was from some systemic state, said that there were also not a few cases in which no relief

could be hoped for from feeding, toning, or stimulating. In these the origin of the pain is either local or altogether mysterious, but the depressing influence on the blood-making functions cannot be doubted. In such instances the battery often gives at least relief, and helps the patient to regain his lost vigor by simply holding the pain in check. In many it will do more than this, and is a means of relief without which it is now impossible to treat pain with the chance of success we ought to expect.

In the following case, the pain, which was finally shown to be due to cancer, was so distinctly intermittent as to deceive several physicians into the belief that it was of malarial origin. The secondary neuralgia of the ulnar nerve was also a peculiar feature.

Fanny P., æt. 48, married, and has one child. Applied for treatment January 10, 1871. Catamenia ceased one year ago. Has had repeated attacks of quinsy, generally on the right side. Until two months ago she has been perfectly healthy; at this time she received a blow on her right ear, with the open hand. There was pain in the ear the night after the blow was inflicted, and in a week the pain had extended over the head and down the neck. The pain, which is now distressing, is paroxysmal, and generally comes on in the afternoon and lasts the greater part of the night; but sometimes it does not begin until eight o'clock P.M. There is a constant throbbing and cracking sound in the right ear, and when she lies on it the pain is increased, as it is also by a jar or sudden motion. Although the pain extends over the entire head, it is greatest on the right side, and for the past week it has been more intense. The hearing of the right ear is impaired. The soft palate droops on the right side, and when she makes efforts to speak the uvula turns to the left. This is probably due to paralysis, as the right side of it is insensible to the induced current. There is, however, no paralysis of the face. There is tenderness over the mastoid process, and pressure here increases the pain. She has frequent headaches, with occasional vertigo. Opening the mouth is painful, and the jaws cannot be separated to the usual extent. She has fever every alternate afternoon, and has also had chills followed by fever and pain, so as to lead several physicians to treat her for malarial neuralgia. Dr. Mitchell thought it probable that the pain was due to the formation of an abscess in some part of the temporal bone, and ordered a blister behind the ear, and five grains of iodide of potassium, with one-sixteenth of a grain of the bichloride of mercury, three times a day. On January 14 there had been no relief of pain. The patient complained of its being excessive in the face, and also, of late, in the branches of the right ulnar nerve; the pain extending down the outer side of the arm into the fingers, mostly in the third finger.

She was ordered morphia hypodermically, and this gave her some relief the night on which it was used. At the next visit, six leeches were directed to be applied behind the ear. The leeching gave great ease, and she declared that she had slept all night better than she had done for two months before, and could open her mouth more readily.

January 27.—She has been leeched twice since her last visit, and with marked relief each time. After a leeching on Monday, 23d, the pain did not return until Wednesday. She still suffers greatly, and there is tenderness on pressure over the mastoid process. It was thought advisable, if the pain were not relieved by the next visit, to puncture the mastoid cells or to make an issue with the actual cautery. This was the last visit she paid to the hospital.

On March 24 she was seen at her home, and stated that she had become so much worse that it was impossible for her to leave her bed. After suffering acutely for three weeks, an abscess ruptured in her throat, and about half a pint of pus was discharged. The pain was immediately relieved, and since has gradually diminished. Although greatly debilitated, she is steadily improving, and feels no discomfort about the ear.

A short time after this report was made, the trouble returned, and the patient went to the Episcopal Hospital, where she died on August 27, 1871. The following notes of the post-mortem examination were kindly furnished by the resident physician:

"Autopsy made three hours after death. Three of the superficial cervical lymphatics on the right side were enlarged and presented a scirrhous appearance. The larynx and œsophagus were normal. The parotid gland of the right side was enlarged, indurated, and firmly attached to the surrounding bones. After removing the gland, the ascending ramus of the inferior maxillary bone was found roughened and partially absorbed,—the condyle almost completely. The bodies of the upper cervical vertebræ in connection with the gland were eroded, as was its attachment to the base of the skull. Upon microscopic examination of the gland, all the characters of scirrhus were indicated."

The following case is curious, because there was a distinct history of syphilis, while the pain had a more immediate relation to gastric conditions, and it was relieved chiefly by induced currents. It is interesting to contrast the slower result thus obtained with the remarkably speedy relief in the case of Mrs. P., just quoted from our case-books:

Benjamin H., clerk, applied for treatment March 3, 1871. Came to this country from England in February, 1870. Three or four years ago he contracted syphilis, and has experienced the secondary effects of the disease: he has now a specific psoriasis on the legs. In May last he had a slight speck on the cornea, but had no other trouble until November, when he began to have attacks of neuralgia. The pain commenced below and external to the left eye, and in the infra-orbital nerve. It came on in the afternoon, and ended in headache, which was confined to the left side of the head. The neuralgia is now in the left supra-orbital nerve alone, is very severe, and the headache which follows the attack may occur in any part of or over the entire head. There is more or less neuralgia every day, but it never begins until after dinner. Unusual use of the eyes hastens an attack.

His appetite is poor, and digestion imperfect, the food being passed undigested. Much acidity of the stomach, and heartburn, exist. He vomits now and then, but only after the headaches, to which he says the vomiting is due. His general health is only moderately good.

He was directed to take subnitrate of bismuth, bicarbonate of soda, and compound tincture of cinchona, three times a day, and an application of the primary induced current was made over the supra-orbital nerve by means of the metallic brush, the skin having been previously made thoroughly dry by flour dusted over the surface. The neuralgia which was present at the time the application was made was instantaneously relieved.

March 7.—He was much relieved by the application of electricity; the pain did not return for a couple of hours, and then was less severe. The digestion is better. Electricity was again applied.

March 14.—Improvement marked and continued.

March 24.—For the past two days the pain has been greater, but by no means so severe as when he first came under treatment. An application of dry faradization immediately banished the pain.

March 28.—He has had no return of the supra-orbital neuralgia, but has a slight pain in the ball of the left eye. He was ordered five grains of iodide of potassium three times a day, as his digestion is good.

April 4.—Still no neuralgia, but the pain in the eyeball continues. The dyspeptic troubles have returned in a slight degree: he was therefore directed to discontinue taking the iodide of potassium, and return to the bismuth, soda, and bark.

This patient was seen three or four months after the treatment was discontinued, and he had had no more neuralgia.

EFFECTS OF EXTENSION OF THE NERVES ON THEIR IRRITABILITY.—G. Schleich, in the *Zeitschrift für Biologie* (*The Academy*, June), records a considerable series of experiments made with the object of determining the effect on their excitability by stretching nerves with various weights, and states that moderate extension of the nerves of the frog, the extending weight being about forty grammes, causes no material diminution of its excitability; when, however, the weight exceeded this amount, the excitability rapidly diminished. In some instances slight extension seemed to augment the excitability of the nerve. Muscular contractions were often observed when the extending weight exceeded thirty grammes.

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EDITORIAL.

MEDICAL JURISPRUDENCE.

THE progress of medical science during the last quarter of a century has naturally led to a closer attention to the subject of forensic medicine. We need not stop here to insist upon the importance of this study, both to the physician and to the lawyer: in both these professions, the experience of every day fully demonstrates this. But it may not be amiss to bring to the notice of those who have not thought about the matter, the comprehensiveness of the subject in its general details.

It may be safely asserted that there is no department of medicine which is not laid under special contribution, at one time or another, to aid the cause of medical jurisprudence. We will suppose the case to be—one of frequent occurrence—the identification of a dead body, discovered under suspicious circumstances, with marks of violence upon it. In the first place, in order to perform the autopsy, a knowledge of *anatomy* is essential; then, properly to understand the significance of certain wounds, fractures, luxations, etc., an acquaintance with *surgery* is requisite; or, should the examination negative the idea of violence as the cause of death, then a knowledge of *pathology* is most important to aid the examiner in determining what alteration of structure —what internal lesion—has occasioned the extinction of life.

Should the case be one of that numerous class involving the sexual relations,—such as pregnancy, suspected or concealed, criminal abortion, infanticide, legitimacy, paternity, or rape,—a knowledge of *obstetrics* becomes indispensable in deciding the question at issue. Again, should the expert be required to give an opinion on that most intricate and perplexing of all the questions claiming the attention of the physician,—mental disorders,—how can he hope to unravel the tangled web without some familiarity with the *psychological* actions of the economy? We all know how frequently such cases occur, both in the civil and criminal courts: in the former, where the question of civil responsibility is raised; and in the latter, where the question of criminal responsibility is so often the point at issue, as a bar especially to capital punishment.

Then, again, should the case lie in that extensive field of criminal jurisprudence embracing murder by poisoning,—a crime frequently committed with such skill and subtlety as to defy detection,—how absolutely indispensable becomes the knowledge of *chemistry* to him who would desire to aid the cause of justice! Thus we see how most, if not all, of the branches of medical science, contribute their quota to the building up of the fabric of medical jurisprudence.

Such being the case, we cannot but deem it a mistake with most of our American schools of medicine to devote so slight an attention to this branch of science. In many of them it is but a mere *attaché* to some other department of study, tacked on to give effect to the printed curriculum of the college. In some schools it seems to be entirely ignored, not even the name of the branch appearing in their annual announcements. It is very different in the European schools, especially the continental ones. Those of Germany and France may be particularized in this respect. Among the great medico-legal authorities of these two countries, of the past and present generations, we need only mention the names of Casper, Marc, Orfila, Foderé, and Tardieu as lights in this department of science. We venture to express our hope that the time is not far distant when, in all our schools, an acquaintance with medical jurisprudence will be deemed an essential to graduation.

In our present article, we are more especially interested to bring before our readers certain points connected with *toxicology*. It must be evident to every observer that the crime of poisoning is alarmingly on the increase in this country. The facilities for procuring the more common poisons, the ease with which they can be administered, and the fact of the strong resemblance of the symptoms occasioned by many poisons to those of disease, will easily account for this. But this very circumstance only makes it the more imperative on the part of the forensic physician to exert his utmost skill in detecting the poison. Such has been the progress of chemical science within the last twenty or thirty years, that we may assert that mineral poisons may nearly always be infallibly discovered after death, *provided* they have not been previously ejected from the body, and *provided* the death has not been postponed sufficiently long to allow of the total elimination of the absorbed poison. With the organic poisons——the alkaloids, for example—the case is different. For some of these, there is, as yet, no known chemical test. For the identification of such, we are obliged to depend chiefly upon their sensible and physiological properties,—more particularly as exhibited on animals. Only a few of them have, thus far, been detected in the blood, the organs, and the secretions. Nor is it always possible to discover them even in the stomach after death; although every year is adding to our stock of knowledge, in this line of research.

There are certain practical difficulties in the way of justice, when the point at issue is the detection of poison by the toxicologist. One of these difficulties is the impossibility of always procuring a competent analyst for the examination. It becomes necessary to send the suspected materials, often to a great distance, to a prop-

erly-qualified chemist. Then, in nearly all important criminal cases of this character, expert witnesses are summoned, especially by the defence, whose object is to neutralize and break down the chemical evidence for the prosecution. This frequently leads to a perplexing conflict of scientific opinions, unless the presence of the alleged poison has been most positively and unequivocally demonstrated by the prosecution. To remedy this difficulty, various plans have been proposed; one of which is that the State should appoint one or more competent toxicologists, properly salaried, whose especial duty it should be to make the proper chemical analysis in every case of poisoning brought before the courts, and to report thereon. Such a plan would, however, only partially obviate the difficulty first mentioned: it might, it is true, insure a correct analysis, and so far satisfy the demands of justice; but it would still leave the accusation open to rebuttal by the expert witnesses called by the defence; and this very rebutting testimony exposes the witnesses on both sides to the charge of partiality and partisanship.

To meet this contingency, a plan was suggested by Prof. Henry Hartshorne at the last meeting of the American Medical Association, viz., "that in important criminal cases, requiring the evidence of medical or chemical experts, the cause of justice will be promoted by the appointment by the court, in every such case, of a commission of experts, empowered to collect all purely scientific testimony bearing on the case, and report upon it to the court by which the case is to be tried." The author of this suggestion supposed that the appointment of such a commission would do away with the necessity of summoning the expert witnesses in such criminal cases; but although we regard his proposal as an excellent one, and possibly the best that could be adopted, yet we can imagine a difficulty that might be urged in the way of its adoption, namely, that it deprives the accused party of the privilege of summoning his own scientific witnesses. But this is met by the reply that the commission of experts should be sworn to execute their trust "without fear or favor."

The next point for discussion has reference to the *compensation* to be made to the scientific witnesses. Probably no set of men are more imposed upon, in the way of receiving adequate compensation for their services, than medical and chemical "experts." It makes but little difference whether they be called for the prosecution, or for the defence. In the first case, the State, or rather the county, is represented by a junta of men called, in Pennsylvania and some other States, "county commissioners," and in New Jersey "the board of chosen freeholders." These persons, as a general rule, are totally incompetent to affix a proper valuation either upon an exhaustive toxicological examination, or upon an expert opinion — the result of years of study and research: hence they will often think a fee of fifty or a hundred dollars to be a very ample compensation for work which is legitimately entitled to five or ten times that amount. The petty quibbles, subterfuges, and often downright tricks, that have come under our personal knowledge, in this connection, are certainly not very creditable to the "public servants" above alluded to. We will mention a few of these, of no very pleasant reminiscence to ourselves, as the victim of this low species of dealing.

Some years ago, we were called upon to make a chemical analysis of the stomach of a person supposed to have been poisoned by arsenic; and an immediate examination was urgently requested. The poison was discovered without difficulty, in very large amount, and the report of the analyst was sent up to the county authorities, with a moderate bill for the work. This bill was totally ignored, and payment refused, by a technical quibble, on the ground that the Justice who had acted as coroner at the inquest resided either within, or without (we forget which), the exact legal boundary of the coroner's jurisdiction! It so happened that just one year later there occurred another case of poisoning in the same county (Perry), and the request was again made for a similar service, through a respectable physician of the place, with the promise by the authorities that proper compensation would be made. With a mistrust natural under the circumstances, we felt justified in first insisting upon a written guarantee from the county commissioners for the payment of the full fee, on the completion of the analysis and the rendering of our testimony at court. The contract was faithfully performed on our part; but when the other party was called upon to "make payment," some quibble was again raised, and we were actually compelled to bring suit against the county, and pay a lawyer's fee, before we could recover! In Camden County, New Jersey, a similar difficulty was experienced. In a case of suspected poisoning, where the court, then in session, had ordered a chemical examination to be made, *having first agreed upon the terms*, the "board of freeholders" subsequently rejected the bill for professional services, as being *in their opinion* too high, and compelled the analyst to sue the county, at considerable expense and loss of time to himself!

Even in our own city, matters are not much better. The court, for example, or the district attorney, orders a chemical analysis, in a case of alleged poisoning. The work is carefully and scientifically performed; the report is handed in; and, possibly, the analyst gives his testimony in court. But he finds it much more difficult to get his pay, than even to make his tedious analysis. In the first place, he must apply to the "Commissioners" to countersign the order of the judges; next, he must lay the Commissioners' order before the City Councils. These gentlemen will probably criticise his bill as being "exorbitant;" at all events, they will refer it to the "finance committee," before whom he may be compelled (according to our own experience) to appear more than once, and argue his own cause; and even submit to a paltry deduction from his just claim!

One other incident in our "experience" we will relate, as it very conclusively shows the direct bearing of this question of *compensation* upon the great ends of justice. Not long since, a woman living in Hunting-

don County, Pennsylvania, was arrested and put in prison on the charge of poisoning her mother-in-law. An autopsy of the deceased was made, and the stomach and other viscera were forwarded to Philadelphia, with a request for us to make the necessary toxicological examination. As in the former cases, we first required the proper authorities to guarantee the payment of a stipulated fee on the completion of the work and the rendering of testimony (should it become requisite) at court. To this they at first demurred, but subsequently concluded to sign an agreement for the payment of a certain amount for the analysis alone,—a less sum than the one first proposed,—and then wished it left discretionary *with them* as to what they would pay the analyst in case he should find the poison, and be compelled to go to court and testify in the case. To this latter arrangement we very decidedly objected, not being willing, after our past experience, to trust at all to the tender mercies of "county commissioners." We almost blush to record the fact, that more than ten weeks was consumed in fruitless attempts, on their part, to carry their point; and at last the *material* was returned unopened to the person who had sent it, with a positive refusal to have anything to do with it, under the circumstances. Now, we submit that here a most flagrant wrong was inflicted upon the prisoner, who was kept in unnecessary suspense and confinement, simply because "the commissioners" would not agree to the terms of the analyst. Certainly, no one will say that *he* was bound to do this work except upon his own prescribed terms (the same precisely as those of other chemists). Moreover, they could have applied, if so disposed, to other toxicologists. But no: the prisoner, who was possibly all the time innocent, must be subjected to this unnecessary detention, under the dreadful charge of murder, simply because of the unwillingness of the authorities to pay the usual professional charge for the analysis! It seems to us that the party aggrieved, if not proven guilty, would have a very just cause for an action against the county for illegal and unnecessary detention in prison.

Now, we think it is high time that some change for the better, in this direction, should be instituted. It is simply scandalous that professional men should be subjected to such contemptible annoyances, in the matter of their pecuniary compensation. When we consider, moreover, that these services are rendered in the most important of all cases,—those involving life and death,—and that, without their aid, the ends of justice must be defeated, the wrong here complained of is seen to be still more intolerable, and one the more urgently demanding redress.

OUR ANNUAL WATER-FAMINE.

IN the Annual Report of the Board of Health of this city for 1871, the following passage occurs:

"It cannot be denied that, at seasons of the year when a free use of water is most essential to the well-being of the community, there has been a scarcity, which has seriously interfered with the comfort, if not the health, of citizens, and formed a just ground of complaint. This evil has, we understand, been remedied for the limited future; but with the increase of consumption necessarily consequent upon the increase of population, the question arises as to whether the present source of the supply will be adequate to the increasing demand."

This is certainly mild language. For years, every summer has seen a water-famine in this city, with two great rivers flowing past it. Property-owners are heavily taxed to raise millions wherewith to maintain a water department, which yet fails so egregiously that by the 1st of July there is scarcely a house where a bath can be drawn in the second story. We think the Board of Health might better have used far stronger language.

Under the present system, if we are rightly informed, it takes fourteen gallons of water, as power, to raise one gallon into the reservoir at Fairmount. Failing the full quantity or head of water, this great city, with really an abundance of water, has to call upon its Fire Department, or *to send to New York*, for the steam-power which ought to be permanently on hand, and in order, to keep the reservoirs pumped full.

We would urge that this whole matter demands investigation; that the proper authorities should invite suggestions, or, if need be, proposals, for so remodelling our entire system of water-supply as to make these water-famines impossible. The means which were quite adequate to the furnishing of water to a city of one or two hundred thousand inhabitants, occupying an area of about ten square miles, will entirely fail to answer the needs of a population of nearly a million, spread over an area of one hundred and twenty square miles.

The mere multiplication of reservoirs will not remedy the evil of which we complain. What is wanted is an unfailing source from which to obtain water, and such mechanical arrangements as will insure an abundant supply of it for distribution the whole summer through. Unless, which we do not believe, modern engineering skill has been exhausted already in the service of the Philadelphia Water Department, the people should demand of that Department a far more efficient discharge of its responsibilities.

DR. R. J. LEVIS, and Dr. A. D. Hall, the writer of the admirable letters on "Ophthalmology Abroad" which have recently appeared in this journal, were on Wednesday last reinstated in their positions of Attending Surgeons to the Wills Ophthalmic Hospital. This is simply an act of justice to these gentlemen, since no charge of incapacity or of negligence has ever been brought against them. Inasmuch, however, as the hospital contains only forty beds, it is to be hoped that the energy of the Board of City Trusts will hereafter manifest itself in some other way than in making any further additions to the medical staff, which now numbers ten surgeons.

PROCEEDINGS OF SOCIETIES.

BIOLOGICAL AND MICROSCOPICAL SECTION OF THE ACADEMY OF NATURAL SCIENCES.

JUNE 3, 1872.

VICE-DIRECTOR JAMES TYSON, M.D., in the chair.

PRESENT, Messrs. I. Norris, Wells, McQuillen, J. G. Hunt, Buckingham, and Richardson.

Donations of photographs of the 9th and 19th bands of Nobert's test-plate, and also of a "Report on Two Cases of Cancer," were received for the museum of the Section from Col. J. J. Woodward, M.D., of the Surgeon-General's Office, Washington, D.C.

On motion of Dr. J. G. HUNT, it was ordered that a vote of thanks be transmitted to Dr. Woodward for his generous contributions to the museum of the Department.

Dr. HUNT inquired of the members what they thought was the comparative value of the two similar plates accompanying Dr. Woodward's "Report on Two Cases of Cancer," and stated that he believed the doctor was desirous of obtaining the opinions of practical microscopists in regard to the relative perfection of the two modifications of the Albertype process therein employed. After some discussion, the subject was postponed, to allow a thorough inspection of the prints.

The Director, Dr. TYSON, then requested Dr. Hunt to take the chair, and proceeded to read an interesting paper on Urinary Microscopy, especially with regard to its value in the diagnosis of disease without the aid of a chemical examination of the fluid.

On motion, it was referred to a committee composed of Drs. McQuillen, Richardson, and I. Norris.

Dr. RICHARDSON endorsed the views contained in Dr. Tyson's paper as quite in accordance with the results of his own experience, and strongly expressed his conviction that it was just as foolish to expect in any case that the microscopic investigation, alone and unaided by a knowledge of the history, local and general symptoms, hereditary tendencies, etc., should solve all the problems of renal disease, as it was to depend exclusively upon a stethoscopic examination of the lungs when required to make a diagnosis between the various pulmonary affections.

Dr. HUNT remarked that it seemed to him we had quite too much neglected the study of the pathological structure of the kidney as connected with disease of the urinary organs.

Dr. MCQUILLEN inquired whether any of the members present had attempted to make an injection of the kidney from a case of Bright's disease, and, if so, whether they had succeeded in injecting the Malpighian corpuscles.

Dr. TYSON said that he had not as yet attempted to inject kidneys from well-marked cases of Bright's disease, and added that in healthy human kidneys he had found the cold injection of Prussian blue, as advised by Dr. Beale, to work well, although for some unexplained reason it was more difficult to obtain a good result in the kidney of man than in that of the pig.

Dr. RICHARDSON mentioned that some ten years ago Dr. Wm. F. Norris and himself, whilst resident physicians to the Pennsylvania Hospital, had made numerous more or less successful experiments at injecting human kidneys,—one of which was, he believed, from a case of Bright's disease in its early stages. He thought, however, that in many examples of that affection, especially when marked cirrhosis of the organ existed, it would be impossible to inject the Malpighian corpuscles, on account of the obliteration of their vascular tufts by the contraction of their thickened capsules.

Dr. HUNT stated that he also had experimented in the injection of kidneys, but had been much dissatisfied with the syringes now in use, and believed that only some modification of the water-pressure or air-pressure apparatus could answer the purpose efficiently.

Dr. TYSON observed that the process with the acid carmine injection advised by Dr. Beale had utterly failed in his hands, and he did not see how any form of apparatus, or any manipulation of the fluid, could render it a satisfactory mode of injecting.

Dr. MCQUILLEN said his object in asking the question was on account of the fact that he had failed in an attempt to inject a kidney handed to him by Dr. William Pepper, with the statement that the patient died in the Philadelphia Hospital from Bright's disease. Every step in the performance of the experiment had been conducted with the greatest care. It was the first and only time, however, that he had endeavored to inject a human kidney; and he wished to know whether the result was due to a change in the structure of the organ, or to inexperience on his part; having injected a number of sheep's kidneys prior to this, and with uniform success, he had been disposed to attribute the result to the former rather than the latter cause.

Dr. HUNT thought the difference in favor of Dr. Beale's results might be attributed to his scrupulous care in using none but fresh animal tissues.

Dr. MCQUILLEN remarked that in his experiments upon the kidneys of sheep he had taken great pains to insure this important condition for success, visiting slaughter-houses to procure his specimens immediately after the animals had been killed, and proceeding at once, without loss of time, to inject the vessels. His results had in consequence been, as a rule, very satisfactory, even his first attempt proving a successful one.

Dr. TYSON further observed, in reference to the acid carmine injection, that, whilst he recognized the advantage of staining the germinal matter of the vessels with an ammoniacal solution of carmine, and then filling the blood-vessels with Prussian-blue fluid, he looked upon this mode of procedure as quite a different method from the process with the acid carmine mixture.

Dr. HUNT called attention to a specimen he had arranged beneath one of the microscopes, exhibiting a transverse section of some of the gastric tubuli of the pig's stomach, remarking that it was still a mooted point whether two sets of glands did exist in the stomach; and, although he had of late years made numerous investigations for the purpose of determining this question, he did not as yet feel satisfied in regard to it, although so far at least he had been unable to detect more than one kind of these glandular organs.

Dr. TYSON said that the literature of the subject, which he had recently had occasion to consult, was very much involved, and that he believed a rich field was open for research in this direction.

REVIEWS AND BOOK NOTICES.

LECTURES ON THE CLINICAL USES OF ELECTRICITY. By J. RUSSELL REYNOLDS, M.D., F.R.S., Professor of the Principles and Practice of Medicine in University College, Examiner in Medicine to the University of London, Physician to University College Hospital. 12mo, pp. 112. Philadelphia, Lindsay & Blakiston, 1872.

ELECTRICITY IN ITS RELATIONS TO PRACTICAL MEDICINE. By DR. MORITZ MEYER, Royal Counsellor of Health, etc. Second Revised and Corrected American Edition, Translated from the Third German Edition, with Notes and Additions, by WM. A. HAMMOND, M.D., Professor of Diseases of the Mind and Nervous System, and of Clinical Medicine, in the Bellevue Hospital Medical College; Physician-in-Chief to the New York State Hospital for Diseases of the Nervous System, etc. 8vo, pp. 506. New York, D. Appleton & Co., 1872.

The demand for a second edition of Dr. Hammond's translation of Meyer's Medical Electricity, following closely upon the publication of several recent works on the same subject, both British and American, evinces on the part of the profession a wide-spread interest in electro-therapeutics, and gives rise to the hope that electricity as a remedial agent is about to be reclaimed from the degradation into which it has fallen, and—the proper bounds and limitations of its usefulness becoming more clearly defined, the methods of its employment

better known, and the necessary apparatus cheaper and more manageable—that it will, before long, assume its true position with the profession at large as a familiar instrumentality in the intelligent and scientific treatment of disease.

Several corrections in typography are made in the second edition of this valuable treatise, and an inaccurate statement in reference to Ohm's law of the relation of the strength of a galvanic current to the motor power and the resistance is corrected: "the strength of the current equals the electro-motor power *divided by* the resistance," instead of "*multiplied by*," as in the first edition (p. 19).

In an appendix, Dr. Hammond calls attention to certain improved forms of electrical apparatus for medical use, which have been introduced by the Galvano-Faradic Manufacturing Company of New York, since the publication of the first American edition. Some of these are remarkably elegant and efficient instruments for employment in electro-therapeutics, and a detailed description of four of the more important of them, and of an extended variety of electrodes, is not considered out of place.

Dr. Reynolds' little book, as we are informed in the preface, is a republication of the course of lectures which he delivered in University College Hospital during the summer of 1870, and which first appeared from short-hand reports in the *Lancet*. His object has been to render them strictly practical, by avoiding all trespass upon debatable ground, and confining his remarks as closely as possible to ascertained facts with regard to the clinical uses of electricity in the diagnosis and treatment of disease. The plan laid down is somewhat narrow, and it is closely adhered to, so that, although the principle of unity in book-making is observed, much that is indispensable to the comprehension of the subject is omitted, and we have rather a concise summary of the practical knowledge of electricity at the time the lectures were delivered, convenient for reference in the hands of the practitioner, than an exhaustive consideration of even the clinical uses of this potent agent, such as is needed by the student of science or the specialist.

The local employment of electricity in the various paralyses,—1st, from cerebral disease, 2d, from spinal disease, 3d, local or peripheral paralysis, 4th, hysterical paralysis, and, 5th, lead or toxic paralysis,—together with its use in spasmodic diseases and neuralgia, occupies the greater part of the volume.

"In all cases of *hysterical* paralysis, whatever may be the distribution of the symptoms, electricity is of the highest service; and faradization or franklinism is found to be more efficacious than galvanism." (Page 81.)

"In the neuralgiæ, electricity is often of considerable service. It is the continuous galvanic current which you should use, and it should be of only such strength as to be just perceptible by the patient; it should be applied to the part with well-wetted sponges, and should be applied for a short time only, but with frequent repetition." (Page 97.)

The entire subject of general electrization, except by static electricity, is omitted. Yet this is among the most valuable, if indeed it is not *the most valuable*, of all the uses of electricity in medicine. General electrization by the faradaic current has rendered most efficient service in very many of those mysterious nervous diseases in which, even in post-mortem investigation, no *locus morbi* can be found; the results which follow its employment in functional paralysis, epilepsy, certain forms of neuralgia, hysteria, and hypochondriasis, are often extremely gratifying; and there is no doubt of its value, as a general tonic, in diseases dependent upon or associated with feebleness of the vital processes and impairment of nutrition.

The uses of electricity in clinical surgery—*electro-surgery*, as it has been called—are not considered. In an appendix, Dr. Reynolds enumerates the requirements of an "electrical room," whether in hospital or for private practice.

PRACTICAL SUGGESTIONS IN NAVAL HYGIENE. By ALBERT LEARY GIHON, A.M., M.D., Surgeon U.S. Navy. Pp. 151. Washington, 1871.

This valuable little work emanates from one who has had ample experience through years of continuous service in times of peace and war, and an intelligent appreciation of the great need of a sanitary code for guidance on shipboard. For a long series of years naval hygiene has been more a matter of "custom of the service" than of common-sense regulation, and the suggestions of the surgeons have frequently been unheeded, as Dr. Gihon truly remarks, because of the habitual use by narrow-minded officers of the power at their command to resist what they pretended to consider encroachments upon their jurisdiction, and a dread that the medical officer might transcend his position. These small jealousies doubtless prevail in the naval service of every country, and any authoritative guide which rests on the score of attention to the health of officers and seamen, and is not a mere reflection of the sentiment of the medical corps in contradistinction to that of the other corps, should receive a warm welcome. Beginning with the subject of the examination of recruits, careful directions for which are given for the benefit of the young surgeon especially, the author next passes through the receiving-ship and the navy-yard to the ship itself, which is to be for a while the home of the sailor, and in which ventilation, clothing, light, personal cleanliness, food, water, sleep, exercise, moral and climatic influences,—all of which are here discussed,—operate as so many elements of health or disease, according as hygienic rules are observed or neglected. We learn that the greater number of our national vessels are overcrowded with men, and the numerous inconveniences attendant upon such vitiation of the atmosphere therefore demand all the care and attention which can be bestowed upon them. Valuable suggestions are offered by Dr. Gihon on the proper employment of ventilation and light as hygienic means, and many improvements suggested in regard to the food and the mode of dispensing it, not the least important of which is a proposed modification of the hours of meals, which are now usually furnished at eight, twelve, and four o'clock, the men thus eating three times within eight hours, and fasting all the rest of the day, during which they perform some of their most laborious work. The author states that "the sailor of to-day is not the brute of fifty years ago. The barefooted, abject, illiterate being whose back bore the scars of the cat is not recognizable in the well-dressed, tidy, manly-looking seaman who receives his letters and papers regularly from home, and signs his name legibly to the shipping articles." Let us hope that the same civilized sentiment which has effected this improvement may lead to an equally watchful care over his hygienic condition, and that the advice given by Dr. Gihon, based on his own experience in the service, may not remain unheeded by those in authority.

The book is a very readable and ably-written little work, and should interest every member of the profession. It concludes with a large number of sensible sanitary regulations for the navy and for transports, proposed by the author, many of which will doubtless be incorporated—though not perhaps until after the lapse of many years—into the rules of the service by official order. In a letter introductory to the work, Dr. Ruschenberger, one of the most honored surgeons in the navy, and universally respected in and out of the service, states that Dr. Gihon should not expect to see his suggestions adopted at once, but that he may reasonably hope that by the time those young aspirants for renown in the navy, who are now just entering the Naval Academy, are captains and commodores, the truths which he sets forth so well will come to be considered worthy of attention. We do not ourselves doubt that a long interval of time will supervene before their value will be thoroughly understood and appreciated in the "Circumlocution Office."

THIRD ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF MASSACHUSETTS. Pp. 329. Boston, 1872.

EIGHTEENTH REPORT UPON THE REGISTRATION OF BIRTHS, MARRIAGES, AND DEATHS IN THE STATE OF RHODE ISLAND. Prepared under the Direction of John R. Bartlett, Secretary of State, by EDWARD T. CASWELL, M.D. Pp. 96. Providence, 1872.

So few of the States seem to make the health of their population a subject of special study, that we take pleasure in referring to any one of our great Commonwealths which relinquishes once in a while politics for hygiene. There are hundreds of items of general interest associated with the preservation of the health of every community, and we are therefore surprised that State Boards are such extreme rarities.

That of Massachusetts has already exhibited the value of systematic watchfulness over the physical condition of its people, and of the importance of the collection of vital statistics. If such a body can be kept free from the contaminating influence of politics, so much the better, although the insidious influence of the latter seems to pervade almost every branch of art and science. We see nothing, however, on the face of the Massachusetts report to induce even a suspicion that its value is impaired by such a disturbing element. The duties of the State Board of Health of this Commonwealth are important from the very nature of the powers assigned to it. Its general functions are embodied in the care of all interests affecting the life and health of the citizens, and it is expected to make sanitary investigations and inquiries in respect to the people, the causes of disease, and especially of epidemics, and the sources of mortality and the effects of localities, employments, conditions, and circumstances on the public health. It also advises the State government in regard to the location of any public institution. The annual report recently published contains a valuable series of papers, the most important of which are those on "Arsenic in Certain Green Colors," of wall-paper especially, by Dr. Frank W. Draper; "The Use and Abuse of Intoxicating Drinks throughout the World," by Dr. H. I. Bowditch; "Proper Provision for the Insane," by Dr. Edward Jarvis; "The Use and Abuse of Opium," by Dr. F. E. Oliver; "Effects on Health of the Use of Sewing-Machines," by Dr. A. H. Nichols; "Slaughtering, Bone-boiling, etc.," by George Derby; "Vegetable Parasites and the Diseases caused by their Growth upon Man," by Dr. Jas. C. White; and one or two papers on smallpox and the health of towns. The paper of Dr. Bowditch is interesting as being an excellent temperance document, in the real sense of the word, which does not imply total abstinence. Intemperance, he remarks, is rarer and less dangerous where the vine is grown and wines are made and sold cheap and used with entire freedom by all, from babyhood to old age.

The registration report of Dr. Caswell, of Rhode Island, presents the statistics of births, deaths, marriages, and divorces in that well-organized little State, in a very acceptable manner. It is a model of statistical accuracy and patient research, and is elaborated with a degree of care rarely visible in public reports and official documents. We should be glad, if we had the space, to give an analysis of its contents. It would be well if State officers elsewhere could always be so lucky as to secure the co-operation of men of Dr. Caswell's calibre; although this is perhaps hoping for too much in these degenerate days.

THE IRRITABLE BLADDER: ITS CAUSES AND TREATMENT. By FREDERICK JAMES GANT. Third Edition. Pp. 221. Lindsay & Blakiston, 1872.

The term "irritable bladder" is not restricted in this volume to the limited class of cases described by Sir Benjamin Brodie, but is adopted as a convenient title to express the prominent condition thought to be present in all troubles incident to the bladder either directly or indirectly. Hence the author treats of the diseases of the rectum and the genito-urinary organs at length, as well as of the urine—its chemical and physiological relations. Indeed, he might have better entitled his book Diseases of the Bladder and Associate Organs.

To say that it is a useful manual is to award its highest praise; and it is to be tested with this regard, as we would test an instrument. No doubt that interesting character, the "busy practitioner" of whom we hear so much from the reviewers, has proved it in this way to his satisfaction, since we learn that the work has reached its third edition.

We notice an absence of original cases. There is at best a beggarly array of cases of any kind. For our part, we could willingly have spared much of the commonplace generalizing upon constitutional causes of disease, and had its place supplied with original cases and comments. Such a plan would have been in accordance with the promise of the title-page, that a practical view would be given of urinary pathology, etc.

The author startles us with the announcement of a "remarkable law," to the effect that the temporary suspension of consciousness in one portion of the central nervous system is necessarily accompanied by its undue display in another direction, and its excitement in one position is as necessarily followed by its exhaustion in the remaining portion of the system. Hence, in epilepsy, suspension of consciousness is coupled with convulsive movements of the limbs and trunk.

DR. RIGBY'S OBSTETRIC MEMORANDA. Fourth Edition, Revised and Enlarged. By ALFRED MEADOWS, M.D., Physician to the General Lying-in Hospital, etc. 18mo, pp. 104. Philadelphia, Lindsay & Blakiston, 1872.

This little book, originally written by the late Dr. Rigby, has, in the preparation of the present edition for the press, been carefully revised by Dr. Alfred Meadows, who is favorably known in this country as a writer on obstetrics. A few alterations in the arrangement of the subjects have been made, and some new matter has been added; but the editor's efforts have been directed—and in this we think he has succeeded—towards furthering the original intention of the author, by making the book as practically useful as possible. Its small size, while allowing it to be very readily carried in the pocket, will not be found to prevent it from containing a large amount of valuable information.

BOOKS AND PAMPHLETS RECEIVED.

A System of Surgery; Pathological, Diagnostic, Therapeutic, and Operative. By Samuel D. Gross, M.D., LL.D., D.C.L. Oxon., Professor of Surgery in the Jefferson Medical College of Philadelphia, etc., etc. Illustrated by upwards of Fourteen Hundred Engravings. Fifth Edition, Greatly Enlarged and Thoroughly Revised. In two volumes, 8vo. Vol. i., pp. 1098; vol. ii., pp. 1170. Philadelphia, Henry C. Lea, 1872.

On Food: its Varieties, Chemical Composition, Nutritive Value, Comparative Digestibility, Physiological Functions and Uses, Preparations, Culinary Treatment, Preservation, Adulteration, etc. Being the substance of four Canton Lectures, delivered before the Society for the Encouragement of Arts, Manufactures, and Commerce, in 1868. By H. Letheby, M.B., M.A., Ph.D., etc., Professor of Chemistry in the College of the London Hospital. Second Edition, Enlarged and Improved. 12mo, pp. xvi., 255. New York, William Wood & Co., 1872.

Minutes of the Twenty-third Annual Meeting of the American Medical Association. Philadelphia, William B. Atkinson, M.D., 1872.

The Seventeenth Annual Announcement of the Pennsylvania College of Dental Surgery.

Fourteenth Annual Report of the Board of Trustees of the Charity Hospital of Philadelphia.

GLEANINGS FROM OUR EXCHANGES.

THE MORAL TREATMENT OF HYSTERIA.—In Guy's Hospital Reports for 1872 (*The American Practitioner*, June, 1872) Dr. Samuel Wilkes makes the following judicious remarks on the management of hysteria:

"It sometimes surprises me that medical man declare their utter helplessness while standing by the bedside of an hysterical patient. They will confess that all means have been tried in vain, that there is no real disease to cure, that it is an imaginary or nervous disorder, and nothing can be done, when it is their own presence in the case which constitutes the very root and foundation of the malady. Let us take the case of a girl who goes to her bed with an ideal paralysis of the legs, or some similar disorder. She sinks into a morbid state, and puts on a second nature; she becomes the centre of a world of her own creating; she is the interesting invalid; she receives the sympathies of inquiring friends, the care of nurses, the consolation of the clergyman (for she is usually outwardly pious), and, above all, the daily visit of the medical practitioner, who prescribes appropriate physic. This is her perverted life; this is 'her little game.' Now and then the physician is called in, who gives his opinion that a great deal of the malady is due to hysteria, orders some iron and quinine,

and perhaps galvanism, and so the play goes on. The medical man declares that he has tried every means and failed. Does he not see that the whole affair is a drama of the patient's own creation, and she the central figure of the piece? She is to be ill, she is to have her doctor, and enjoy in her morbid way all the interesting surroundings of the invalid. Does he not see that to cure her he must break into the charmed circle, and to spoil the play he must get rid of some of the performers? And does he not see that, even if he has no influence over others, he might withdraw himself? Here is a young lady who says, 'I will be ill, and have a doctor to attend me.' How can she accomplish this if the latter declines to obey her behests? or if he accepts the post, how can he, in the name of common sense, say he cannot break her of her fancy while he is a party to it? If he sees clearly the truth of what I have been saying, his duty is, as professional adviser to the family of the patient, to retire, and use his influence to prevent the calling in of another medical man. I have myself seen in several instances where such advice has been given, and the parents have said to their child, 'We will have no more doctors,' that recovery has at once ensued. In one of the worst cases of hysteria I ever saw, where a young lady had been bedridden for three years, and during this time must have swallowed hogsheads of physic, and had her body covered with leeches and blisters without number, besides being well rubbed with tartar-emetic ointment, the medical attendant suddenly died, when the father declared that his daughter was ruining him, and that he would have no more doctors. From that time she began to recover, and may now be seen walking about quite well. Of course, if the medical man be wise and judicious, he may adopt various plans to break up the scheme of the young lady who has become the presiding genius not only in the household, but in the whole family-circle for miles around. My complaint is against the acts of a medical man who pays a daily visit to his patient, sends her physic to be taken every four hours, besides sleeping-draughts, prescribes a very particular regimen, consisting of all kinds of delicacies, commencing with rum and milk in the morning, and then says he cannot cure her of an imaginary complaint. Next to giving her physic when he knows there is nothing the matter with her, the worst thing is to diet her; for there is nothing so harmful in perpetuating a nervous malady as this. If he would one day say, 'No more physic; and as for diet, eat and drink what you would like,' he would be administering a moral stimulus more efficacious than all the iron and quinine she had ever swallowed.

"A young lady keeps her bed for two or three years for an affection of the hip, and is seen by all the leading men in London. One day the clergyman walks in, prays over her, and she gets up and walks. The case is reported in all the religious journals as a miracle, whereupon the doctors all join in declaring that the case was one of hysteria, and that there was nothing the matter with her. Then, I would ask, why was that girl subjected to local treatment and to the infliction of physic every day for years? Why did not the doctors do what the parson did? Of course the utmost acumen is required in order to make the diagnosis, for it is as cruel to call every female disorder hysterical as it is baneful to treat every malady as real. It is the doctor's daily labor to unravel the meaning of pain, whether it has a real seat or whether it be subjective. No rules for diagnosis can be laid down; every case must stand on its merits. I am merely offering a quota towards the value of moral treatment in genuine cases of hysteria, and of the harm done by all other means. I speak without hesitation in this matter, for some of the most remarkable recoveries that ever could have occurred have taken place in my ward in cases which had been hopelessly despaired of when the usual routine was being pursued."

CAUSES OF VARIATION IN THE AMOUNT OF GASES CONTAINED IN THE BLOOD.—Drs. Mathieu and Urbain, in a paper contained in the May number of Brown-Séquard's *Archives de Physiologie* (*The Academy*, June), state that they have been able to establish the accuracy of the law, "that in animals maintaining a constant temperature, the quantity of oxygen absorbed by the blood varies inversely with the temperature of the air that they respire." In other words, the amount of oxygen that circulates in the arteries of a vertebrate animal with warm blood is greater when it is exposed to cold, and less when exposed to warmth; and, as a consequence, all the processes of organic combustion are rendered more active under the former condition, while they are retarded under the latter. They further show that under diminished pressure there is diminished absorption both of oxygen and of carbonic acid by the blood, and *vice versa*.

THE EFFECTS OF HYDRATE OF CHLORAL ON CHILDREN.—Dr. Alois Monti (*Schmidt's Jahrbücher*, No. 2, 1872; from the *Jahrbücher für Kinderheilkunde*) has noticed the following as the effects of hydrate of chloral when given to children: Half an hour after the dose is taken, slight reddening of the face occurs, and the child falls into a deep sleep. The pulse, which is at first accelerated, becomes slower, the respiration is not affected, and the temperature of the body falls. It is only when very large amounts are given that this condition is preceded by a period of excitement accompanied by contraction of the pupil. The sleep is perfectly normal, and when the child awakes there is no sleepiness, tendency to congestion of the brain, nor disturbance of the sensorium, left. Occasionally chloral causes vomiting, but never diarrhœa. Twenty-four hours after the exhibition of chloral, sugar may be detected in the urine by Fehling's test.

Chloral may be given to children—1, to produce sleep; 2, in convulsions (whether symptomatic or idiopathic), when there is no complication such as inflammation of the bronchi, heart, or lungs. It should be given with great care to anæmic, atrophic, or weakly children. 3, in spasm of the larynx; 4, in chorea; 5, in pertussis. Chloral has, on the other hand, not been found to be of any service, according to Dr. Monti, as an anæsthetic, or in the treatment of idiopathic or traumatic tetanus.

THE TREATMENT OF PNEUMONIA BY THE NEUTRAL ACETATE OF LEAD.—Dr. Strohl (*The Practitioner*, May; from *Le Journal de Médecine*, February, 1872), whilst admitting that pneumonia undergoes spontaneous cure in the greater number of cases, thinks that appropriate treatment should be adopted to aid the powers of nature. For many years he had recourse to the ordinary method of bleeding and the administration of tartar emetic, but since the year 1841 he has been in the habit of giving sugar of lead, which he considers to be the best of internal remedies for this disease. It is preferable, he remarks, to tartar emetic, to digitalis, and to veratria, because its action is more certain, more prompt, and more free from inconveniences. Its action is incontestably superior in the pneumonia of old people. About five grains may be taken per diem in solution, in divided doses. M. Strohl has never observed the slightest indication of saturnine poisoning in the course of this treatment, and M. Lendet, who has also used it largely, makes the same observation. Far from producing diarrhœa, it rather occasions constipation. It does not interfere with any of the phenomena concomitant to the critical resolution, as expectoration, diaphoresis, etc. Under its action the pulse rapidly diminishes in frequency, the febrile symptoms disappear and the temperature falls in the course of six days. The use of lead may be intermitted as soon as the fever has abated and resolution has fairly set in.

TREATMENT OF SUBCLAVIAN ANEURISM.—A long paper on this subject appears in the last volume of Guy's Hospital Reports (*The Practitioner*, June, 1872), by Mr. Poland, in continuation of a similar one in the preceding volume. In the present paper the principal points taken up are—1. Ligature of the first portion of the subclavian artery for the cure of subclavian aneurism. Eleven cases are on record of this operation having been performed. As Mr. Poland observes, it is fraught with danger, and is for the most part undertaken against the acknowledged rules laid down for the success of ligature of a large artery in aneurism, the vessel being tied close to the aneurismal sac, at a point where large and important vessels are given off from it, and where it is in proximity with nerves, veins, and the pleura. In some subjects one incision is sufficient, but generally two will be found requisite. All the cases recorded, with one exception, were of the right subclavian. The operation is pronounced by Ferguson the most difficult in surgery, and it is doubtful whether it

should be again attempted, every case having proved fatal, though with different symptoms. The longest duration of life was thirty-six days. 2. Simultaneous ligature of the first portion of the subclavian and common carotid arteries. This operation has also proved uniformly fatal. 3. Ligature of the innominate. This has been performed twelve times without one case of success, though in a case under Graefe the patient lived to the sixty-seventh day.

A Zootrophic Powder.—V. Polli (*The Practitioner*, May; from the *Medizinisch-chirurgische Rundschau*, Feb. 1872), after dwelling on the importance of the presence of various mineral constituents of the body in food, if the healthy nutrition of the tissues is to be maintained, recommends the following powder as containing some of the most essential: Phosphate of lime, 10 parts; tribasic phosphate of lime, 10 parts; phosphate of soda, 15 parts; carbonate of lime, 10 parts; sulphate of magnesia, 15 parts; chloride of sodium, 10 parts; bicarbonate of potash, 15 parts; oxide of iron, 10 parts; oxide of manganese, 2.5 parts; silicate of potash, 2.5 parts. The dose of this powder is 45 grains daily for children, or double the quantity for an adult. He recommends its use especially—1, in infants at the breast who are suffering from dentition, or in nurses; 2, in children suffering from osteomalacia, rachitis, scrofulosis, or chlorosis; 3, in pregnant women, and those suffering from puerperal cachexia; 4, in fractures, and cases of caries of the bones; 5, in tuberculosis, especially when there are vomicæ; 6, in anæmia after hemorrhages, and in leucocythæmia; 7, in convalescence after long illness.

The Action of Quinia on the Colorless Blood-Corpuscles.—Dr. Geltowsky contributes to *The Practitioner* for June a very interesting paper on this subject, from which we make the following extract:

"We see, therefore, that although quinine possesses the power to stop the movements of the colorless globules, yet this action can only be obtained on the stage of the microscope. On injecting into the blood doses which cause the death of the animals, quinine has no influence on the colorless blood-corpuscles. Even if the quinine had had the same influence on the colorless corpuscles of the blood in the interior of the organism as under the microscope, it would have been impossible to explain, by the action of quinine on the colorless corpuscles, the cure of certain maladies under treatment by this drug, because, according to the preceding experiments, it is necessary to employ one part of quinine to twenty-eight hundred parts of the blood of man. Hence, in the case of a man in whom the quantity of blood would amount to about fifteen to twenty pounds, it would be necessary, in order to obtain the special effect, to take almost one drachm of quinine, which would be impossible."

The Synovial Membranes in Pyæmia.—In a paper recently read before the Royal Medical and Chirurgical Society (*The British Medical Journal*, June 1), Mr. Robert Hamilton, F.R.C.S., called attention to the fact that the synovial membrane is generally attacked in pyæmia. All the cases occurring at the Liverpool Southern Hospital for the last thirteen years, of which particulars had been kept, had some joint-affection. In some the pathological changes in the joint were slight, in others most extensive. That the disease observable in the joints begins in the synovial membrane, is rendered probable from the character of the pain and from the appearances found after death. The poison of pyæmia, as observed in hospital practice, is *sui generis*. Whether generated in the system from constitutional and surrounding conditions, or entering as a specific germ through a wound, it has a special affinity for certain structures, and to these it passes at once. These structures are assumed to be the synovial membranes. The strong analogy between pyæmia at the commencement and acute rheumatism has often been observed. In both there are the rigors, the fever, the rapid pulse, the profuse sweating,—but above all there are the pain and swelling of one or more joints. It seems probable that in both an entity enters the system whose habitat is the joint. It is not known in what consists the difference between the two poisons, so that the one, as a rule, eventuates in recovery, and the other in a train of pathological changes whose termination is death. In both cases, the tissue first affected is the synovial membrane. The abnormal action induced in it leads to an increased secretion of synovia, probably unaltered in its characters and constituents in rheumatism, but abnormal in pyæmia. In the case of synovial fluid there is in most joints a limit to its quantity, which leads to a forced absorption of some of the effused fluid, and ensues in acute rheumatism, and probably, as a necessary sequence, an extension of the disease to other synovial sacs, and often to the pericardium, a serous membrane, but closely allied in its nature to a synovial membrane. This augmented synovial fluid in rheumatism is bland and innocuous,—a mere increase of the natural secretion; but in pyæmia it is in a decomposing state, developing rapidly germs of a lower organization; and when such a fluid has been absorbed, and in its course reaches the minute capillaries of the lungs, some of its morbid cells coagulate the fibrin of the blood there, and become arrested; and thus are formed the nuclei with which the nerves are studded, around which more fibrin is deposited, and then the pathological changes follow as described by Virchow.

Treatment of Hydrothorax by Paracentesis Thoracis.—In a thesis read for the M.D. degree of Cambridge, Dr. Evans (*The Practitioner*, June, 1872; from St. Thomas' Hospital Reports, 1871) strongly advocates the propriety of tapping the chest in cases where fluid has accumulated in it as a result of acute pleurisy. He gives a good historical account of the operation, and adds the details of some cases that have fallen under his own observation. The statistics of the mortality after the operation vary, according to whether certain extreme cases are included or not, from 24 to 29 per cent. As circumstances favoring the adoption of the operation, Dr. Evans mentions the following: 1. Pleuritic effusion may of itself cause fatal results, which would be prevented by the early removal of the effused fluid. Trousseau in 1841 knew of no less than from fifteen to twenty instances of sudden unexplained death in cases of large pleuritic effusion. 2. It has been alleged, and, Dr. Evans thinks, with reason, that the continued compression of a lung by pleuritic effusion is likely to predispose to disease, tubercular or otherwise, of the lung on the other side. An overworked lung must certainly be placed in an unfavorable condition for resisting any noxious influences to which it may be exposed; and should there be any hereditary or other constitutional tendency to disease, such as the so-called tubercular diathesis, he believes that it is more likely to be developed in a lung which has extra work to do in consequence of its fellow being incapacitated. Moreover, should a portion of the lungs be rendered useless owing to compression by fluid, in the case of disease attacking any other portion, there will be less spare lung, so to speak, to carry on the work of respiration, and the patient will be exposed to all the more danger. 3. The necessarily slow process of the absorption of the effusion gives time for various changes to take place within the chest, hindering or preventing the re-expansion of the whole or part of the lung; in all probability there would not be time for these changes if the fluid were let out early. Dr. Evans proceeds to point out the futility of the principal objections that have been advanced against paracentesis thoracis,—as, that there is danger of death from syncope during or immediately after the operation; that the operation may set up suppurative inflammation; that the admission of air may lead to such suppurative inflammation, and that hemorrhage may occur,—and then indicates the advantages it affords, namely, that it is the shortest and simplest method of getting rid of the fluid, at once relieving the patient from distress and dyspnœa, and that it places him at once in a more favorable condition for the absorption of the remaining fluid, or of any subsequent accumulation. In regard to the operation, he thinks the admission of air should be avoided, the puncture should be made in the fifth or sixth interspace in the axillary line, and when the fluid ceases to flow during inspiration, the canula should be removed and the wound closed.

Changes produced in the Liver by the Arrest of the Circulation in the Portal Vein.—Dr. Solowieff (*Centralblatt*, June 1) has instituted some experiments upon animals to determine what is the effect upon the liver of an obstruction of the portal vein. As the ligature of the vein is generally

followed immediately by death, Dr. S. either tied one of its principal branches, or threw a ligature loosely around it so as to produce a narrowing of its channel, but not its complete obliteration. In cases in which the animals lived for some weeks, the thrombus, which was always found in the vein, was pale in color, and showed a tendency in its centre to break down into a fine granular yellowish mass. In some cases it could be removed with ease from the vessel, but in other cases it seemed to have formed connection with it. The liver was atrophied; upon section, the tissue was firm, and cried under the knife; it was anæmic, dry, and dark-brown in color; the hepatic cells were diminished in size, irregular in shape, red in color, and contained oil. The nucleus was detected only with great difficulty: in some cells it could not be found at all. Thrombi were also found in the branches of the portal vein, and in the neighborhood of these obstructed vessels the connective tissue had undergone a decided increase. It was found in various stages of development, partly old and partly recent. In the latter case, spindle-form cells with their processes, stretching in all directions, could be seen.

PARALYSIS OF THE BLADDER CURED BY ELECTRICITY.—In this case (*Bulletin Général de Thérapeutique*, June 15, 1872) a young man took with suicidal intent fifteen grammes of laudanum. Treatment was promptly instituted, and a fatal result was thus averted; but the patient, whose bladder was full at the time of taking the laudanum, was unable to pass his water for several days afterwards. After the more usual remedies had been tried without success, Dr. Pierreson determined to use electricity. One pole of the battery was placed upon the hypogastrium, and the other was applied to the free extremity of a metallic catheter, which had been previously introduced into the bladder. At the end of six days the patient is said to have had no trouble whatever in micturating. In cases where from some cause the introduction of a catheter into the bladder is prevented, the galvanization of the organ can be effected by applying one pole to a sound introduced into the rectum.

MISCELLANY.

METEOROLOGICAL.—The mean temperature of the month of June, 1872, was 76.26°, or a degree less than the highest mean temperature recorded for June in Philadelphia since June, 1790. The highest temperature observed during the month was 94°, on the 14th and 29th; the lowest 58°, on the 5th. Although the mean temperature of the month was higher in 1870, there have been more hot days this year, the thermometer having run above 88° on eleven different days during the month just past.

The total rain-fall for the month was 4.22 inches, 1.6 inches having fallen on the 25th. The average rain-fall for June during the past thirty-five years has been 4.10 inches.

THE fatal effects of long-continued and excessive heat are very fully shown in the tables of mortality, which we present as usual in another column. It will be seen that the total number of deaths reported to the Board of Health of this city for the week ending July 6 was seven hundred and forty-six. Children suffered, of course, more than adults. Thus, five hundred and twelve of the deaths occurred in children under five years of age, four hundred and seventy-six in children under two, and three hundred and eighty-eight in infants who had not yet attained their first year. The disease furnishing the largest number of deaths is cholera infantum, as many as two hundred and seventy-four children dying of it. Eighteen adults and four children are said to have died from the direct effects of the heat, or from sunstroke; but that this gives but a faint idea of the mortality among adults which may be traced to the influence of the heat, will be seen by comparing the table for the week ending July 6 with that of the week preceding.

New York appears to have suffered even more severely than Philadelphia, for the number of deaths there is more than one hundred per cent. greater than that in this city, with only about forty per cent. greater population.

We give below the maximum and minimum temperatures from June 27 to July 5 inclusive, as recorded at the Pennsylvania Hospital:

	Maximum.	Minimum.
June 27	91	74.5
" 28	92	76
" 29	94	78.5
" 30	93	79
July 1	98	82
" 2	98	84
" 3	98	82
" 4	97 5	83
" 5	91.5	75

BEQUESTS TO HOSPITALS ABROAD.—*The Medical Press and Circular* discourses, in a late issue, upon hospital endowments in a way to astonish those of our readers who have any personal knowledge of our similar institutions. Perhaps after all, however, it is only old age and youth. The remarks alluded to are as follows:

"Hospital managers in London have certainly their lines cast in pleasant places. It would almost appear, from a perusal of the grants, donations, subscriptions, and bequests recorded from day to day in the *Times*, that their greatest difficulty must be to withdraw the money out at one end of their purse with as much rapidity as rich and benevolent people keep pouring it in at the other.

"A well-known charitable institution, which is a favorite with the public, had its annual meeting last week with great *éclat*, only that one circumstance deprived the occasion of its natural stimulus: it was totally impossible to follow the example of Oliver Twist, and ask for more, because the funds of the institution are simply glutted. It accommodated 698 patients under treatment, and 403 convalescents, and sustained a total of 127 beds. It expended £7835, or about £62 per bed per annum. Nevertheless, it carried forward £3000 of a surplus unexpended, and had a reserve of £23,000."

ASTLEY COOPER PRIZE.—The next triennial Astley Cooper prize of £300 will be awarded to the author of the best essay or treatise on "Injuries and Diseases of the Spinal Cord," which must be sent to Guy's Hospital before January 1, 1874.

WE learn from *The Indian Medical Gazette* for April that cholera continues to exist in the district of Jounpore, where the disease has existed, to a greater or less extent, during the past twelve months. The disease has also broken out in the district of Bustee, into which it is supposed to have been imported from the Nepal territory.

A NEW HOSPITAL FOR THE INSANE.—At a meeting of the Medical Society of the State of Pennsylvania, the following was adopted: "*Resolved*, That a committee of five members of this society be appointed to prepare a memorial to the Legislature in favor of the erection of a hospital for the insane for the counties of Erie, Crawford, Mercer, Venango, Warren, McKean, Elk, Forest, Cameron, and Clarion, and to press upon them the urgent necessity of such an institution."

A PATENT BED-TABLE.—The *Lancet* for June 1, 1872, contains two wood-cuts representing Mr. Isaacs' patent bed-

table, which seems to be an exceedingly ingenious contrivance. It is made to fix by screws to the frame of an ordinary bedstead, either of wood or iron; and when not required, it folds up and turns away under the bedstead. It has been for some time in use in St. George's Hospital, where it has given great satisfaction.

METEOROLOGICAL REGISTER TABLE.—For the benefit of those who have never lived in Alaska, and who have been led to believe that the Territory is one "unconditional ice-field," we publish below the mean observation of the Meteorological Register Table as computed by W. H. Ensigne, Surgeon U.S.A. of that department, at the respective hours of 7 A.M., 2 P.M., and 9 P.M. of each day:

Date.	Thermometer.	Hygrometer.	Rain-fall.
July 10	55 59 53	54 57 55	.10
11	55 57 54	53 54 52	
12	55 60 54	54 58 53	.10
13	55 62 55	54 60 54	
14	54 54 53	53 53 52	.60
15	53 53 53	52 52 52	.12
16	57 53 53	55 57 52	.25
17	56 59 51	55 57 49	
18	59 62 54	55 58 53	
19	58 63 55	56 62 54	
20	55 61 55	54 58 53	
21	55 61 55	53 59 54	
22	56 65 57	55 63 55	
		Total,	1.17

THE PROSPECTS OF FEMALE PHYSICIANS.—The admission of women into the ranks of the medical profession in Germany appears to have commenced. A young woman recently presented herself before the Faculty of Medicine at Munich for examination for a license to practise as dentist. Being refused, she went to Erlangen. The question was here referred to the government, who at once authorized the examination, on the ground that it was absurd to exclude a person desirous to submit herself to authorized professional tests of ability by reason of her sex. The young woman triumphed, and, the German journals add, is likely to find immediate imitators.

Mr. Walter Thomson, of Shahabad, has forwarded to the "Committee for Securing a Complete Medical Education to Women" the sum of £100 in aid of the funds of the committee, and in protest against the conduct of "some of the professors and students of the Edinburgh University." From another Indian source the cause of female medical education has just been subsidized, the Mohammedan Nawab of Rampoor having presented to the Bareilly mission a large building for the female students.

THE DEPOPULATION OF FRANCE.—M. E. Decaisne recently made a short communication to the Académie des Sciences (*L'Union Médicale*, June 15, 1872), of which the following is an abstract:

It appears from the figures given by the author for the principal States of Europe that in the triple point of view of the fecundity of marriages, of the number of births, and of the excess of births over deaths, France occupies the last place in Europe. In Prussia, for every 100 marriages, there are 460 children; in France, only 300. In Prussia, the number of births annually in proportion to the population is 3.68 per cent.; in France, only 2.55. Lastly, the excess of births over deaths in every million of inhabitants is in Prussia 13,300, while in France it is only 2400. From these figures we learn that the population of France will not double itself in less than 170 years, while that of Prussia will double itself in 42, that of Great Britain in 52, and that of Russia in 66 years.

MORTALITY FROM SMALLPOX.—The number of deaths from smallpox in Philadelphia during the weeks ending June 29 and July 6, 1872, were respectively 19 and 10, 16 of which were of minors.

MORTALITY OF PHILADELPHIA.—The following reports are condensed from the records at the Health Office:

	For the week ending June 29.	July 6.
Consumption	44	45
Other Diseases of Respiratory Organs	29	27
Diseases of Organs of Circulation	13	21
Diseases of Brain and Nervous System	64	106
Diseases of the Digestive Organs	123	349
Diseases of the Genito-Urinary Organs	5	7
Zymotic Diseases	48	44
Cancer	6	8
Casualties	11	12
Debility	44	67
Intemperance	2	3
Malformation	1	0
Murder	0	1
Old Age	14	20
Scrofula	0	2
Stillborn	18	8
Suicide	2	1
Sunstroke	0	22
Tetanus	0	2
Tumors	0	2
Unclassifiable	11	14
Unknown	1	3
Totals	436	764
Adults	158	221
Minors	178	543

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U.S. ARMY, FROM JUNE 29, 1872, TO JULY 3, 1872, INCLUSIVE.

RANDOLPH, JOHN F., SURGEON.—By S. O. 148, War Department, A. G. O., June 27, 1872, relieved from duty in Department of the Gulf, to proceed to Washington, D.C., and settle his accounts as Acting Medical Purveyor.

CLEMENTS, B. A., SURGEON.—By S. O. 143, War Department, A. G. O., June 21, 1872, relieved from duty in Department of the Gulf, and assigned to duty at St. Louis Depot, Mo.

SPENCER, WM. C., SURGEON.—By S. O. 59, Military Division of the Missouri, Chicago, Ill., July 1, 1872, assigned to duty as Attending Surgeon and Examiner of Recruits in this city, to date from 25th ult.

BACHE, DALLAS, SURGEON.—By S. O. 123, Department of the East, July 1, 1872, granted thirty days' leave of absence, and at its expiration to report to the Commanding Officer, Fort McHenry, Md., for duty as Post-Surgeon.

STORROW, SAMUEL B., ASSISTANT-SURGEON.—By S. O. 55, Department of the Lakes, June 19, 1872, assigned to duty at Fort Ontario, N.Y.

FELTON, H. R., ASSISTANT-SURGEON.—By S. O. 124, Department of the East, July 2, 1872, to accompany Eighth Infantry to Sioux City, Iowa, return to New York City upon completion of said duty, and report in person at these headquarters for further orders.

JAQUETT, GEO. P., ASSISTANT-SURGEON.—By par. 1, S. O. 109, Department of the Platte, June 28, 1872, assigned to duty as Post Surgeon at Fort Sanders, Wyoming Territory; and by par. 4, same order, granted leave of absence for thirty days.

BROWN, H. E., ASSISTANT-SURGEON.—By S. O. 139, War Department, A. G. O., June 17, 1872, detailed to make the inspections and reports required under Joint Resolution of Congress "Providing for a more effective system of quarantine on the Southern and Gulf Coasts;" to return to Washington, D.C., on November 1, 1872, and, through the Surgeon-General, make his report to the Secretary of War. Station: New Orleans, La.

BUCHANAN, W. F., ASSISTANT-SURGEON.—By S. O. 111, Department of Texas, June 24, 1872, assigned to duty at Fort Concho, Texas.

MONROE, F. LEB., ASSISTANT-SURGEON.—By S. O. 146, c. s., War Department, A. G. O., granted leave of absence for ninety days.